

Rural Economy and Connectivity Committee - Salmon Farming in Scotland -
Call for evidence

1.0 EXECUTIVE SUMMARY

- 1.1 This report sets out the proposed response to the Rural Economy and Connectivity (REC) Committee for the Scottish Parliament, which are currently conducting an inquiry into salmon farming in Scotland. The Committee has invited the Council to submit written evidence to its inquiry into salmon farming in Scotland.
- 1.2 The purpose of the inquiry intends to gather information on the current state of the industry; identify opportunities for its future development; and explore how the various fish health, environmental and other challenges it currently faces can be addressed.
- 1.3 Details on the inquiry and supporting documents can be viewed at <http://www.parliament.scot/parliamentarybusiness/CurrentCommittees/107585.aspx>. The deadline for comments is on 27th April 2018.
- 1.4 This report sets out officers' recommended response to the six questions asked by The Scottish Parliament's REC Committee. The full response is detailed in Appendix 1 attached to this report and Appendix 2 details sources of further information.

2. RECOMMENDATIONS

- 2.1 It is recommended that Members endorse the response to the Scottish Parliament's Rural Economy and Connectivity Committee salmon farming inquiry as detailed in appendix 1 of this report and in particular request that:
- 2.2 With respect to wild fish interests support the transfer of responsibility from planning authorities to Marine Scotland.

**Rural Economy and Connectivity Committee - Salmon Farming in Scotland -
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3.0 INTRODUCTION

3.1 This report details the proposed response to the Scottish Parliament's Rural Economy and Connectivity Committee - *Salmon Farming in Scotland - Call for evidence*; the inquiry and highlights Council officers' recommendations.

3.2 The Rural Economy and Connectivity (REC) Committee is undertaking an inquiry into the environmental impact of salmon farming in Scotland and this report highlights the Council's proposed response to this report.

4.0 RECOMMENDATIONS

4.1 It is recommended that Members endorse the response to the Scottish Parliament's Rural Economy and Connectivity Committee salmon farming inquiry as detailed in appendix 1 of this report and in particular request that:

4.2 With respect to wild fish interests, support the transfer of responsibility from planning authorities to Marine Scotland.

5.0 DETAIL

5.1 Background

5.1.1 The Environment, Climate Change and Land Reform (ECCLR) Committee undertook work in advance of the Rural Economy and Connectivity (REC) Committee for the forthcoming inquiry on aquaculture in Scotland.

5.1.2 The REC Committee is now interested in receiving wider views into the issues in relation to the salmon farming sector by 27th April 2018.

5.2 General Information

5.2.1 In Scotland, finfish aquaculture dominates the sector. Atlantic salmon is the most commonly produced fish. Scotland is the largest producer of farmed Atlantic

salmon in the EU and one of the top three producers globally, producing 162,817 tonnes (£765 m by value) in 2016. The industry has developed in west coast sea lochs and inshore waters since the late 1970s. In 2016, salmon farming employed 294 staff in smolt production and 1,486 in fish production (Marine Scotland Science, 2017). It has been estimated that the direct, indirect and induced impacts creates 10,340 jobs (Highlands and Island Enterprise, 2017).

5.2.2 Scotland accounts for 8% of global farmed Atlantic salmon production and 93% is by five firms, many of whom are represented in Argyll and Bute. In the past decade, the industry has been consolidating worldwide, resulting in fewer, bigger firms to take advantage of economies of scale. Salmon is the UK's largest food export. Although only about 10% of produced salmon is exported, the export market is diversified with exports mainly to France, the United States and China.

5.2.3 Like all farm animals, fish may be susceptible to disease and infestations (in particular of sea lice). The Fish Health Inspectorate (FHI) in Scotland aims to prevent the introduction and spread of fish diseases in Scotland. Sea lice remain one of the most important health issues for the Scottish salmon industry. Marine Scotland's sea lice policy requires fish farms to report to the FHI where an average of 3 sea lice per fish or more is found during a weekly count. This leads to monitoring and possible intervention and enforcement action.

5.2.4 In order to set up a fish farm, consent is required from Local Authorities, Scottish Environmental Protection Agency (SEPA), the Crown Estate, Marine Scotland licensing, and the Fish Health Inspectorate. Ongoing monitoring of fish farms during their operation is carried out by SEPA, the Fish Health Inspectorate and local authorities in relation to food production.

5.3 An overview of recommended responses to the inquiry

5.3.1 General views on the salmon industry

The views expressed in this report are Officer's taking into account those of the industry where relevant.

It is considered vitally important for environmental wellbeing and sector growth that fish farm companies' and regulators do all that they can to minimise the negative environmental impacts that are related to salmon farming. It is important that current standards are improved upon in relation to addressing: sea lice management; escapes; predators (such as by the use of Acoustic Deterrent Devices); the use of wrasse/lumpsuckers; adaptive management; and biodiversity duties by following industry best practice guidelines. It is considered that there is a clear need to follow the Precautionary Principle, and that there are too many regulators with too little effective regulation; Marine

Scotland data sharing including that on sea lice must be improved upon, and agencies will need to work together to be more effective.

5.3.2 Socio-economic benefits to Scotland and Argyll and Bute

The salmon farming industry and associated supply chain contributed 10,340 FTEs, £271M earnings and £ 540M GVA to the Scottish economy on average in 2014 and 2015. In Argyll and Bute, the salmon farming industry contributed 466 in employment, £14.4M earnings and £24M local industry spend in 2016.

Scottish salmon farming industry is profitable and generates socio-economic benefits for the Scottish economy, especially for fragile rural and island communities. However, it competes with other producer countries, which tend to produce larger volumes and have expanded faster to meet growing demand and increasing their market share. Measures that allow the Scottish salmon farming industry to grow efficiently and sustainably by allowing greater production (e.g. sea lice control technologies in the short term, development of more exposed sites in the long term) and reducing costs (e.g. streamlined consenting process) should be supported and facilitated where possible.

5.3.3 Fish health and environmental challenges

The most significant issue facing planning decision-makers in the case of salmon farms is the acceptability of developments in the light of anticipated interactions with the wild salmonid environment. Methods relied on in the past by fish farm operators for the treatment of sea lice by chemical means (bath treatments and in-feed treatments) are proving to be less effective as resistance increases, and operators are having to resort to innovative methods (cleaner fish, temperature and fresh water treatments, and mechanical means) to provide a more effective suite of controls.

Despite these efforts, the incidence of sea lice introduces an element of uncertainty for regulators in the adjudication of proposals to extend or increase the number of farms in those areas experiencing persistently elevated lice levels. There is also increased pressure for marine fin fish farm developments on the west coast of Scotland due to '*the presumption against further marine finfish developments on the north and east coasts to safeguard migratory fish species*' (Scottish Planning Policy 2014 - Para 250). This guidance is reiterated as government policy by Policy Aquaculture 2 in the National Marine Plan 2015. The increase in farmed fish production has coincided with collapsing wild fish numbers on the west coast, and despite the absence of reliable science to demonstrate any causal link between these trends, river interests, salmon fishery boards and other environmental groups routinely point to the presence of farmed fish as being a significant factor in the collapse of wild fish stocks.

The responsibility for considering the implications of aquaculture development upon wild salmonids lies with local planning authorities. This means that consideration should be given to the adequacy of containment (prevention of escapes) and to transmission of disease and parasites between farmed and wild fish.

Marine Scotland's Fish Health Inspectorate (FHI) is responsible for the health and welfare of farmed fish on the farms, their responsibility does not extend to wild fish other than for the provision of advice to planning authorities in their consideration of planning applications. Whilst Marine Scotland receives sea lice data in respect of individual farms from operators, this information is only available to planning authorities (and the public) in the form of aggregated data on an area basis. Planning authorities do not receive operational data from fish farm companies and do not have any role in monitoring production activities on site.

Planning applications for salmon farm development include information to disclose the operator's intentions for controlling interactions with wild fish (equipment attestations, escapes contingency plans, chemical treatment efficacy statements). Applications are subject to consultation with Marine Scotland, Scottish Natural Heritage and the District Salmon Fishery Board.

Planning applications can only consider the various means by which operators intend to mitigate the effects of their developments on wild fish interests (outlined in Appendix 2). They cannot guarantee those measures will necessarily be effective, particularly given that there are off-site environmental factors which contribute to the incidence of sea lice, so levels may become elevated despite an operator's best endeavours.

The only realistic responses to the wild fish issue via the planning process are to refuse permission on a precautionary basis, to seek to control biomass levels by condition, or to require Environmental Management Plans (EMP's) by condition. EMP's seek to monitor mitigation measures, review and adjust operations, with sanctions identified in the event that lice levels remain persistently above good practice levels (3< per fish). Sea lice are an environmental wide issue presenting cumulative impact considerations, therefore their consequences are not best addressed by individual planning applications, which present themselves on an ad hoc basis. The issue of sea lice requires an area wide water body response which cannot be delivered by EMP's associated with individual applications. Whilst new or expanded sites may become subject to EMP's, other long-standing sites, potentially with more biomass or a history of elevated lice levels, may not present a similar opportunity to deploy EMP's, simply because they are not subject to alterations requiring further planning permission.

With conflicting advice from consultees, unreliable science, haphazard coverage by EMP's and significant public concern about the consequences of fin fish farming on the declining numbers of wild fish, planning authorities are required to arrive at decisions that involve weighing up the balance of wild salmonids interests as material planning considerations. In terms of technical knowledge and scientific expertise neither officers, nor councillors are best placed to address wild fish issues.

It is questioned whether wild fish interactions ought to have been a material planning consideration, or whether they would have been better served by regulators with access to the necessary expertise and the opportunity to monitor production activities on site. It is considered this responsibility has been misplaced with planning authorities, and that responsibility should be transferred to Marine Scotland, who would then have environment wide responsibility for sea lice, both on fish farms, and the surrounding environment. As part of the recommendations of the Government's Aquaculture Consenting Review, it is recommended that the interests of wild fish sustainability be transferred from planning authorities to Marine Scotland. As it is considered that, Marine Scotland is the regulator best placed to adjudicate this consideration.

5.3.4 National data on salmon operations

Marine Scotland collects sea lice data on individual farms, but only hosts it publically on an aggregated area wide basis. There has been reluctance on the part of operators to disclose site-specific sea lice data, which limits the availability of reliable historic data to both planning authorities, to salmon fishery boards as statutory consultees, and to third parties to the planning process. In a climate where operators need to improve on past performance in sea lice control via the introduction of new methods, it is important to be able to track performance success on a site by site basis, and to be able to see trends and relative performance between sites. Records of the efficacy of sea lice control at individual sites should be held available publically on a national basis.

5.3.5 Regulatory regime

There is benefit in control over many aspects of fish farming remaining with planning authorities, primarily because of the democratic and transparent process associated with the determination of planning applications. However, some considerations of a technical/scientific nature are best placed outwith that process, as is currently the case with pollution control exercised by SEPA under the Controlled Activities Regulations.

5.3.6 European Union impacts

The impact of Brexit on the Scottish farmed salmon industry is uncertain. However it is thought that this can be managed well by the aquaculture industry given their experience of operating in countries outwith the EU (e.g. Norway, Chile).

6.0 CONCLUSION

- 6.1 Argyll and Bute contains a large number of salmon farms, and many of the key sites are already developed. As a result of this, and a limited availability of new sites, several companies have consolidated, however many are now looking to expand their operations locally. To address existing and new environmental regulations, and increasing sea lice numbers on farms, companies are adopting a number of control measures and best industry practices. It is important that the Council supports regulatory-wide improvements to these control measures in order to ensure future growth of the salmon farming industry is sustainable.
- 6.2 It is therefore recommended that under the Government's Aquaculture Consenting Review, that the interests of wild fish sustainability be transferred from planning authorities to Marine Scotland. As it is considered that, Marine Scotland is the regulator best placed to adjudicate this consideration.
- 6.3 The Council should seek to positively influence the development of the salmon farming industry across the west coast of Scotland. This engagement by the Council in the salmon inquiry is not expected to require additional resources, and presents a key opportunity to positively influence the development of the salmon farming industry across the west coast of Scotland.
- 6.4 With respect to our SOA outcomes for sustainable economic growth, it is therefore important that the Council submits a response to support economic growth across Argyll.

7.0 IMPLICATIONS

- 7.1 Policy: The Council seeks through its Corporate policy, and Argyll and Bute Local Plan 2015 to support the sustainable management of our marine and coastal area. The Argyll and Bute Local Development Plan Supplementary Guidance outlines the Council's objectives for coastal planning and emphasises the necessity of working with all the relevant sectors to fully harness the productive capacity of the marine and coastal areas whilst safeguarding its unique environmental qualities through sustainable development.
- 7.2 Financial: None
- 7.3 Legal: Potential change to regulator regime.

- 7.4 HR: None.
- 7.5 Equalities: None.
- 7.6 Risk: None.
- 7.7 Customer Service: No significant risks identified.

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13th March 2018

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APPENDICES

Appendix 1

Written submission from Argyll and Bute Council (18th April 2018) to Scottish Parliament's Rural Economy and Connectivity Committee Inquiry into Salmon Farming in Scotland

Appendix 2

Background Information and Sources

Appendix 1

Written submission from Argyll and Bute Council (18th April 2018) to Scottish Parliament's Rural Economy and Connectivity Committee Inquiry into Salmon Farming in Scotland

Argyll and Bute Council welcome the opportunity to give evidence to the Rural Economy and Connectivity Committee Inquiry into Salmon Farming in Scotland – Call for Evidence.

Inquiry questions and comments

1. and 2. Do you have any general views on the current state of the farmed salmon industry in Scotland? There have been several recent reports 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?

Argyll and Bute Council welcome the comments detailed within the Environment, Climate Change and Land Reform Committee: report on the environmental impacts of salmon farming.

Environmental concerns

It is considered vitally important for environmental wellbeing and sector growth that fish farm companies' and regulators do all that they can to minimise the negative environmental impacts that are related to salmon farming. It is important that current standards are improved upon in relation to addressing: sea lice management; escapes; predators (such as by the use of Acoustic Deterrent Devices); the use of wrasse/lumpsuckers; adaptive management; and biodiversity duties by following industry best practice guidelines. It is considered that there is a clear need to follow the Precautionary Principle, and that there are too many regulators with too little effective regulation; Marine Scotland data sharing including that on sea lice must be improved upon, and agencies will need to work together to be more effective.

Future Industry Growth - Global outlook

Seafood accounts for 6% of protein consumption by humans globally. In turn, Atlantic salmon accounts for 4.4% of global seafood supply and 70% of it is farmed. Most farmed salmon is produced in Norway, Chile, Scotland and Canada in descending order of production volume.

The UN estimates that the global human population will be 9.7 billion by 2050, probably doubling global demand for protein. Limited space and decreasing soil quality on land, exploitation of wild capture fisheries to capacity, and realised health benefits from consuming more seafood mean that aquaculture will likely account for an increasing proportion of protein supply in the future.

Salmon aquaculture has the highest industrialisation levels and lowest investment risk of all other types of aquaculture. In addition, it is more resource efficient than land animal production. Therefore, it is reasonable to expect that the salmon aquaculture industry will have economic incentives to keep expanding in the future.

Most farmed salmon is produced in Norway (51%), Chile (25%), UK (8%), North America (8%) and other countries (8%) including the Faroe Islands, Ireland, Tasmania, Iceland and Russia. Salmon requires specific environmental conditions, so it is unlikely that salmon aquaculture will expand in additional geographic regions. Moreover, the annual growth in supply of farmed salmon has been slowing down in recent years as it needs technological innovation to overcome biological constraints and speed up its growth again. Among the biggest producer regions, the UK has had the lowest compound annual growth rate since 1997.

In the short-term, supply of farmed salmon is intrinsically inelastic because the planning/production cycle is three years long, resulting in price volatility. In the long-term, and since 2009, the value of farmed salmon has been growing faster than volume, indicating rise in demand but also long-term inelastic supply.

The largest markets for farmed salmon are Europe, including Russia, and North America, although emerging markets such as South America and Asia are growing fast. Demand for farmed salmon appears to be inelastic, meaning that decreases in supply will cause high relative increases in price, which consumers seem willing to accept. For example, this phenomenon was observed in the EU market in 2016, when a drop in supply caused a high relative increase in price. Nevertheless, consumers often react to high price increases by switching to similar products such as trout and wild salmon. So the willingness of consumers to absorb high prices of salmon should not always be assumed.

Scottish production in context

Scotland accounts for 8% of global farmed Atlantic salmon production and 93% of it is by five profitable firms. These are Marine Harvest, Scottish Seafarms, The Scottish Salmon Company, Cooke Aquaculture and Grieg Seafood in descending order of production volume. In the past decade, the industry has been consolidating worldwide, resulting in fewer, bigger firms to take advantage of economies of scale. Salmon is the UK's largest food export. Although only about 10% of produced salmon is exported, the export market is diversified with exports mainly to France, the United States and China.

Scottish farmed salmon has historically had a premium over Norwegian farmed salmon. However, Scotland may be at risk of losing its status as a premium supplier if it cannot satisfy growing demand. This is because retailers seek reliable supply and are often obliged to supply Norwegian or Chilean salmon because of the greater volumes that these countries produce. For example, Norway produces almost 10 times more salmon than Scotland. This way, the premium of Scottish Salmon can be eroded

as retailers must use and promote alternative sources. Therefore, it is important to be able to grow the volume of the salmon farming industry in Scotland as market demand increases.

Priorities for the industry to 2030 are to control sea lice and manage biological threats, streamline the consenting process, focus on applied research, manage environmental risk and trial and use new production models including exposed sites and super-smolt facilities.

Socio-economic benefits to Scotland and Argyll and Bute

The salmon farming industry and associated supply chain contributed 10,340 FTEs, £271M earnings and £540M GVA to the Scottish economy on average in 2014 and 2015. In Argyll and Bute, the salmon farming industry contributed 466 in employment; £14.4M earnings and £24M local industry spend in 2016.

Salmon farming provides employment and local spend in relatively remote rural and island communities. Argyll and Bute has a declining and ageing population. The Local Outcomes Improvement Plan (formerly the Single Outcome Agreement) of the Community Planning Partnership states: “Argyll and Bute’s economic success is built on a growing population”. Argyll and Bute Council aims to achieve population growth by supporting key growth sectors, including Food & Drink and Marine Science, which are in line with Scotland’s Economic Strategy.

The industry-led Argyll and Bute Economic Forum identified aquaculture as an important industry in the region. The Scottish government is also supportive of the aquaculture industry’s aspiration to double its contribution to the Scottish economy by 2030.

Argyll and Bute Council is currently developing a Single Investment Plan (SIP) for Argyll and Bute in order to align future infrastructure investment with strategic economic priorities to help drive a step change in economic activity in the area. It is also intended that the Single Investment Plan will form the foundation for an economic case for additional funding being directed towards Argyll and Bute via a Rural Funding Deal with the Scottish and UK Governments to accelerate the delivery of priority infrastructure projects. The aquaculture industry was consulted for the development of the SIP and will benefit from associated infrastructure projects.

General views

Argyll and Bute Council agree that while Atlantic salmon will continue to dominate the Scottish production for the foreseeable future; there is an opportunity to diversify the sector through Recirculating Aquaculture Systems (RAS) as a way of mitigating many of the environmental impacts from salmon farming. There are similar examples where a number of shellfish farms have diversified their businesses to farm seaweed in Loch Spelve and other sites across Argyll.

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?

Planning issues

The most significant issue facing planning decision-makers in the case of salmon farms is the acceptability of developments in the light of anticipated interactions with the wild salmonid environment. Methods relied on in the past by fish farm operators for the treatment of sea lice by chemical means (bath treatments and in-feed treatments) are proving to be less effective as resistance increases, and operators are having to resort to innovative methods (cleaner fish, temperature and fresh water treatments, mechanical means) in seeking to provide a more effective suite of controls. Despite these efforts, the incidence of sea lice is an element of uncertainty for regulators in the adjudication of proposals to extend or increase the number of farms in those areas experiencing persistently elevated lice levels. There is inevitable pressure for farm developments on the west coast of Scotland due to *'the presumption against further marine finfish developments on the north and east coasts to safeguard migratory fish species'* (Scottish Planning Policy 2014 - Para 250). This guidance is reiterated as government policy by Policy Aquaculture 2 in the National Marine Plan 2015. The increase in farmed fish production has coincided with collapsing wild fish numbers on the west coast, and despite the absence of reliable science to demonstrate any causal link between these trends, river interests, salmon fishery boards and other environmental groups routinely point to the presence of farmed fish as being a significant factor in the collapse of wild fish stocks. The industry has sought to provide reassurance by adopting Scottish Salmon Producer's Organisation *Code of Good Conduct* (CoGP) guidance relating to acceptable incidence of sea lice on farmed fish. However, even where such thresholds prove capable of being adhered to, the trend towards larger production units with higher biomass levels than hitherto, presents additional hosts which result in more lice being present in the environment, even if CoGP standards are met on individual farms. More farmed fish present an increased incidence of sea lice in the marine environment, even where control measures enable CoGP standards to be met.

The responsibility for considering the implications of aquaculture development upon wild salmonids lies with local planning authorities. This means that consideration should be given to the adequacy of containment (prevention of escapes) and to transmission of disease and parasites between farmed and wild fish. Whilst Marine Scotland's Fish Health Inspectorate (FHI) is responsible for the health and welfare of farmed fish on the farms, their responsibility does not extend to wild fish other than for the provision of advice to planning authorities in their consideration of planning applications. Whilst Marine Scotland receives sea lice data in respect of individual farms from operators, this information is only available to planning authorities (and the

public) in the form of aggregated data on an area basis. Planning authorities do not receive operational data from fish farm companies and do not have any role in monitoring production activities on site (in common with the position of planning authorities relative to terrestrial businesses).

Planning applications for salmon farm development routinely include information to disclose the operator's intentions for controlling interactions with wild fish (equipment attestations, escapes contingency plans, chemical treatment efficacy statements and so on). Applications are subject to consultation with Marine Scotland, Scottish Natural Heritage and the District Salmon Fishery Board. Their responses, along with views expressed by other interests and members of the public, inform planning decision-making. Marine Scotland responses tend to be generic in nature providing a commentary on the wild fish interaction issue rather than site specific risk based advice. SNH comments tend to be reserved for locations where there are likely implications for the qualifying interests of national designations, such as SAC's. District Salmon Fishery Boards, not unexpectedly, are likely to take a much stronger line in defence of wild fish interests, often to a point where the planning authority is presented with contradictory opinions on the issue from statutory consultees.

Planning applications can only consider the various means by which operators intend to mitigate the effects of their developments on wild fish interests. They cannot guarantee those measures will necessarily be effective, particularly given that there are off-site environmental factors which contribute to the incidence of sea lice, so levels may become elevated despite an operator's best endeavours. Marine Scotland has recognised the severity of the sea lice issue in recent months by the introduction of its own standards for the incidence of sea lice on farmed fish, with mandatory trigger levels prompting action on the part of operators. Whilst these provide something of a backstop in terms of protecting wild fish interests they have been introduced to address fish health on the farm and have not been devised in response to wild fish interactions.

The only realistic responses to the wild fish issue via the planning process are to refuse permission on a precautionary basis, to seek to control biomass levels by condition, or to require Environmental Management Plans (EMP's) by condition. The latter seek to monitor the success of mitigation measures and to introduce an element of review and adjustment in the light of operational experience, with sanctions identified in the event that lice levels remain persistently above good practice levels. Given those sea lice are an environment wide issue presenting cumulative impact considerations, their consequences are not best addressed by individual planning applications, which present themselves on an ad hoc basis. The issue of sea lice requires an area wide water body response which cannot be delivered by EMP's associated with individual applications. Because applications come forward on an unpredictable basis, and some areas may continue to function for many years without any planning applications, then they do not provide a co-ordinated means of addressing this issue. Whilst new or expanded sites may become subject to EMP's, other long-standing sites, potentially

with more biomass or a history of persistently elevated lice levels, may not present a similar opportunity to deploy EMP's, simply because they are not subject to alterations requiring further planning permission.

It is in the context of unreliable science, conflicting advice from consultees, haphazard coverage by EMP's and significant public concern expressed about the consequences of fin fish farming on the declining numbers of wild fish, that planning authorities are required to arrive at decisions that involve weighing up the balance of wild salmonids interests as material planning considerations. It is fair to say that in terms of technical knowledge and scientific expertise neither officers, nor councillors are best placed to address wild fish issues. This brings into question, in the original division of regulatory responsibilities, whether wild fish interactions ought to have been a material planning consideration, or whether they would have been better served by regulators with access to the necessary expertise and the opportunity to monitor production activities on site. This would point to this issue having been misplaced with planning authorities and to the advantage of responsibility for this area being transferred to Marine Scotland, who would then have environment wide responsibility for sea lice, both on farms and within the surrounding environment. It is to be hoped that the recommendations of the Government's Aquaculture Consenting Review, that the interests of wild fish would be best assured by the transfer of responsibility from planning authorities to Marine Scotland will be adopted. In the Council's opinion, Marine Scotland is the regulator best placed to adjudicate this consideration.

The Council agree that under the existing consenting and regulatory framework for current planning applications, salmon farms should continue to utilise the existing range of control measures where possible, and consenting procedures currently in place.

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

The Council consider that the current national collection of data on salmon operations and farm health is inadequate. Marine Scotland collects sea lice data on individual farms, but only hosts it publically on an aggregated area wide basis. There has been reluctance on the part of operators to disclose site-specific sea lice data, which limits the availability of reliable historic data to both planning authorities, to salmon fishery boards as statutory consultees and to third parties to the planning process. Only latterly have some operators begun to volunteer to disclose site-specific data in association with their planning proposals. In a climate where operators are striving to improve on past performance in sea lice control via the introduction of new methods, it is important to be able to track performance success on a site by site basis, and to be able to see trends and relative performance between sites. Records of the efficacy of sea lice control at individual sites should be held available publically on a national basis.

Further to the above comments, the Scottish Fish Farm production survey aggregates data for production and employment by 'historic' regions such as "West" and "South West", which are not defined in the report. It is desirable that the data are aggregated by local authority area, where possible, and that the historic regions are better defined.

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

The advantages and disadvantages of having some form of 'one stop' consenting process have been visited on a number of occasions; ostensibly because the multi-consent regime in place appears considered by the industry to be burdensome and uncoordinated. Regulators have taken steps in recent years to identify overlaps and gaps afforded by the multi-consent process in an effort to ensure that unnecessary duplication is avoided and that all aspects are properly regulated. There is benefit in control over many aspects of fish farming remaining with planning authorities, primarily because of the democratic and transparent process associated with the determination of planning applications. However, some considerations of a technical/scientific nature are best placed outwith that process, as is currently the case with pollution control exercised by SEPA under the Controlled Activities Regulations. In order to ensure that a multi-consent process is sufficiently robust, it is necessary to ensure that the various material considerations associated with the aquaculture consenting process are allocated to the regulators best placed to form reliable conclusions based upon their access to information and expertise. A multi-consent process with responsibilities distributed appropriately would be as well-equipped as any other to serve the needs of both the development industry and the environment.

The Council agree in principle, that existing regulatory procedures should avoid farm-scale effects on sensitive protected features. Through the SEPA CAR licence process, SNH give advice on the requirement for seabed survey work to determine the presence of protected features close to the farm and prevent any overlap with the farms depositional footprint. The new Fish Health Inspectorate (FHI) regime only considers the health and welfare of the farmed fish and therefore is not considered to adequately mitigate the risk to wild salmonids from sea lice on salmon farms.

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

The impact of Brexit on the Scottish farmed salmon industry is uncertain.

On one hand, negative impacts may include:

- Loss of EU support in the form of facilitating policies, regulation and funding streams (blue growth, CFP, EMFF, Horizon 2020);
- Lack of EU labour, particularly in processing;
- Increased costs of imported raw materials (weaker pound);

- Trade barriers/friction with the EU market;
- Weakened domestic market.

On the other hand, a weaker pound may mean more price competitive exports, something that the industry has been taking advantage of since the drop in the exchange rate.

Discussion and Conclusions

Argyll and Bute encompasses a large number of salmon farms across the region, with many key sites already developed. With this in mind, and a limited availability of new sites, it has been important for several companies to consolidate, however many are now looking to expand their operations locally. With existing and new environmental regulations, and with increasing sea lice numbers on farms, companies are attempting to manage these challenges through a number of control measures and best industry practices. The Council supports regulatory-wide improvements to these measures for the future growth of the salmon farming industry.

It is recommended under the Government's Aquaculture Consenting Review, that the interests of wild fish would be best assured by the transfer of responsibility from planning authorities to Marine Scotland. In the Council's opinion, Marine Scotland is the regulator best placed to adjudicate this consideration.

The Scottish salmon farming industry is profitable and generates socio-economic benefits for the Scottish economy, especially for fragile rural and island communities. However, it competes with other producer countries, which tend to produce larger volumes and grow faster, meeting growing demand and increasing their market power. Therefore, measures that allow the Scottish salmon farming industry to grow efficiently and sustainably by allowing greater production (e.g. sea lice control technologies in the short term, exposed sites in the long term) and decreasing average total costs (e.g. streamlined consenting process) should be supported and facilitated by the public sector.

Appendix 2

Sources

Marine Scotland Science, 2017

Highlands and Island Enterprise, 2017

Aquaculture Growth to 2030

Companies House: UK's registrar of companies:

<https://www.gov.uk/government/organisations/companies-house>

Economic Forum Report

GLOBEFISH - Analysis and information on world fish trade (accessed 27 Feb 2018)

Independent Review of Scottish Aquaculture Consenting

Argyll and Bute Local Outcomes Improvement Plan

MH Salmon Farming Industry Handbook 2017

Scotland's Economic Strategy

Scottish Aquaculture: A View Towards 2030

Scottish Fish Farm Production Survey 2016

SSPO economic report 2017

The Value of Aquaculture to Scotland 2017

Aquaculture Growth to 2030.

Independent Review of Scottish Aquaculture Consenting

Scottish Planning Policy 2014 - Para 250

Policy Aquaculture 2 in the National Marine Plan 2015.

Salmon Farm Mitigation Techniques:

- Following escape/containment plans;
- Seal management including: industry improved tension nets and extending the use of double skinned predator nets;
- Providing and following farm management statements;

- Following site specific sea lice action plans, including operational details for other sea lice management measures, i.e. cleanerfish and mechanical removal methods (Hydrolicer and Thermolicer units);
- Employing sea lice skirts;
- Providing efficacy statements in terms of availability of sea lice chemical treatments;
- Providing and following Environment Management Plans (EMPs);
- Providing Environmental Impact Assessments (EIAs) when required;
- Following the Code of Good Practice (CoGP) (Scottish Salmon Producers Organisation);
- Employing the SEPA Controlled Activities Regulations (CAR) licence process;
- Following good husbandry practice (4-6 week fallow periods, single year class, regular lice counting on farms; and communication between companies).

Hydrolicer Systems

Hydrolicer systems work by using variable-pressure seawater to dislodge sea lice from the salmon without any detrimental impact on the fish. The method is benign in that it only uses seawater and fish are not exposed to physiological stress or deteriorating water quality. Dislodged sea lice are removed from the used seawater by fine mesh filtration, collected and disposed of by incineration on land. Further development in vessel technology will see Hydrolicer units incorporated into the design of well-boats or larger dedicated vessels.

Thermolicer Systems

Thermolicer systems are similar in that they expose the fish to lukewarm water for 30 seconds, which dislodges the sea lice, due to the low tolerance of a louse to rapid change in body temperature. Due to the significant body mass of the salmon, there is no measurable change to body temperature of the salmon, but the sea lice are sufficiently affected to detach from the salmon.