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29 January 2019

Dear Edward

The Scottish Government response to the Rural Economy and Connectivity (REC) report on 'Salmon Farming in Scotland'.

In advance of the planned Parliamentary debate next week, Ms Cunningham and I are pleased to be able to provide you with the Scottish Government's response to the Rural Economy and Connectivity Committee (REC) report on 'Salmon Farming in Scotland'.

As you would anticipate the response is lengthy, in kind looking to respond to the many recommendations within the original report, and adding further context where appropriate. I would be happy to meet and discuss the response in more detail if that would be helpful.

I sense much commonality around the challenges facing the sector and our collective resolve to make tangible early progress. I look forward to expanding on these points next week.

I am copying this letter and attachment to the Convener of the Environment, Climate Change and Land Reform Committee.

Fergus Ewing
FERGUS EWING



Scottish Government response to the Rural Economy and Connectivity Committee (RECC) Report on 'Salmon Farming in Scotland'

January 2019

Introduction

We welcome the recently published report from the Rural Economy Committee (REC) on 'Salmon Farming in Scotland' and the valuable contribution that the previous inquiry undertaken by the Environment, Climate Change and Land Reform Committee has made in helping to formulate the recommendations in the report. In the intervening period we have also seen the publication of findings of an Independent Expert Panel on Aquaculture in Canada, which has provided the Canadian administration with advice and recommendations on the appropriate use of scientific evidence in risk-based aquaculture decision-making. That report self-evidently highlights the wider global focus on the growth of the aquaculture sector and indicates that there remains much to learn, and equally much to offer, as we look to ensure the future sustainable growth of the sector.

We also welcome the Committee's acknowledgement of the economic and social value that the salmon farming industry brings to Scotland, while observing that the report focuses primarily on the impact of salmon farming on other sectors and interests. We think it worth noting that farmed salmon is Scotland's largest food export (and was the UK's largest in 2017), with Scotland accounting for virtually all of the UK's farmed salmon production. Scotland is also the 3rd largest farmed salmon producer worldwide and accounts for approximately 94% of EU production. The sector currently employs more than 12,000 people and is worth around £620M of added value to the economy. That contribution provides significant social and economic support to many of our remote coastal and rural communities, and has proven to be the impetus in many cases for wider local investment and growth. Against that background, it is clearly in the interests of both the sector and Scotland as a whole for salmon farming to grow sustainably.

We agree with the Committee's conclusion that the status quo is not acceptable and before turning to the specific recommendations in the report, it is worth setting out the range of actions already underway to make improvements in the sustainability of the sector and address concerns.

In May 2018 we published a 10-year Farmed Fish Health Framework to address the health and wellbeing of farmed fish, promote innovation in fish health management and reduce fish farm mortality. That framework has resulted in a wide range of specific work streams, with groups all now fully populated and underway.

In June 2018, we established the Salmon Interactions Working Group under an independent Chair, John Goodlad, to explore the question of interactions between wild and farmed salmon.

In November 2018, the Scottish Environment Protection Agency (SEPA) set out its detailed plans for how it will regulate the sector's environmental footprint in the future.

The REC report provides a detailed analysis of the challenges and opportunities facing the sector. We agree with many of its conclusions as set out below and view the report as a helpful staging point in the development of the sector in Scotland. Where we have indicated that we will take forward recommendations we will be happy to provide regular updates on progress to Parliament.

Cabinet Secretary for the Rural Economy
Cabinet Secretary for the Environment, Climate Change and Land Reform

Summary of conclusions and recommendations Economic and social impacts of salmon farming

The Committee acknowledges both the economic and social value that the salmon farming industry brings to Scotland. It provides jobs to rural areas, investment and spend into communities and stimulates economic activity in the wider supply chain. (see paragraph 30)

RECOMMENDATION 1 However, the industry also creates a number of economic, environmental and social challenges for other businesses which rely on the natural environment and the Committee recognises this impact. Therefore, if the industry is to grow, the Committee considers it to be essential that it addresses and identifies solutions to the environmental and fish health challenges it faces as a priority. (see paragraph 31)

RECOMMENDATION 2 The Committee strongly agrees with the view of the Environment, Climate Change and Land Reform Committee (ECCLR) Committee that if the industry is to grow, the “status quo” in terms of regulation and enforcement is not acceptable. It is of the view that urgent and meaningful action needs to be taken to address regulatory deficiencies as well as fish health and environmental issues before the industry can expand. (see paragraph 61)

RECOMMENDATION 3 The Committee notes calls for a moratorium on new salmon farm development and expansion of existing sites, it considers that there is insufficient evidence to support this. (see paragraph 62)

Scottish Government response (recommendation 1-3): We recognise that if salmon farming is to continue to grow sustainably then effective procedures need to be in place to address and pre-empt, where possible, environmental and fish health challenges.

It is right to recognise that as well as the challenges, the sector also brings with it a number of significant benefits to existing and potential future business enterprises; and that it has often been the catalyst for wider social, economic and infrastructure changes within our coastal communities. Retaining and protecting Scottish salmon’s price premium is dependent on the manner in which it works with the environment and those who share the same space. To achieve that end the sector requires the recruitment and retention of highly trained staff, be it farm managers, environmental consultants, planners and technicians, who are attracted to the benefits of working in communities in some of our more remote and beautiful regions. This in turn enriches these communities by providing high quality jobs, generating much-needed economic activity and producing social benefits which feed through to schools and other local services. Thus the success of Scotland’s aquaculture sector reaches far and wide and has driven a resurgence in our economic supply chain and subsidiary businesses, and that is a position that continues to this day, even as the cloud of Brexit provides little clarity on the future.

It is also important to recognise that sea lice numbers recorded at Scottish salmon farms in September 2018 were the lowest for that month in five years, and overall numbers for 2018 were the lowest since reporting began in 2013. This reflects the

major efforts which the sector has made in recent years to tackle the challenge of sea lice both through preventative husbandry and through non-chemical methods such as sustainable use of 'cleaner fish.' Thus, after six years of production trials a collaborative project at Machrihanish between Stirling University, Scottish Sea Farms and Mowi (formerly Marine Harvest) has successfully closed the culture lifecycle of the Ballan wrasse. It is now expected that Scottish Sea Farms and Mowi will be able to produce all their requirements for wrasse cleaner fish in the next few years.

The sector is also making significant investment in jobs through such initiatives as Mowi's Kyleakin feed plant – this £100 million development on Skye will deliver fish feed for all of the company's Scottish sites as well as feed for Ireland and Norway, creating 50 full time jobs. Similarly, Scottish Sea Farms is investing around £50 million in its new hatchery at Barcaldine, an initiative which will allow for the development of husbandry practices that reduce the time during which farmed salmon are susceptible to sea lice in the marine environment.

However, we absolutely accept the need to continue to address and identify solutions to the environmental and fish health challenges faced by the sector as a priority.

That is why we are already reviewing the farmed fish Sea Lice Compliance policy, which we anticipate will be completed by the spring. We also welcome the recognition by the Committee of the importance of such initiatives as Scotland's 10-year Farmed Fish Health Framework, the Salmon Interactions Working Group and the draft SEPA Finfish Aquaculture Sector Plan.

We anticipate that over the next twelve months these processes will allow us to identify whether there is a case for further legislative change, and/or modification in the enforcement regime governing how the aquaculture sector interacts with others.

Growth of the industry

RECOMMENDATION 4 The impact of expansion plans on other sectors which share the marine environment needs to be recognised and the impact reduced. The Scottish Government, SEPA and all other responsible authorities should therefore ensure that the needs of other industries are fully considered in setting the strategic context for the sector. (see paragraph 63)

The Committee believes that if these challenges are effectively addressed then the many economic and social benefits of the farmed salmon industry can grow as both the industry, and the communities it works with, continue to develop. (see paragraph 64)

SG response: We would endorse the views of the Committee and reference the Joint Ministerial Statement which set out how the Scottish Government and its agencies will work constructively with the sector and others with a direct interest to operate a policy and regulatory framework that enables sustainable growth while maintaining the right balance across our economic, environmental and social responsibilities

<https://www2.gov.scot/Resource/0051/00516406.pdf>

This approach is already evidenced within Scotland's National Marine Plan which makes these considerations fundamental to the current regulatory framework. Equally and in parallel we should look and consider the impact of others on the aquaculture sector and seek to reduce that where appropriate and evidenced.

We acknowledge the need to balance the interests of other marine industries into consideration where any new or established industry seeks to grow or work differently and the wider objective to maximise the benefits (be it commercial, social and/or environmental) from our marine spaces. While ensuring that decisions are rightly made in a local context with complete transparency and with all the evidence freely available, we should not lose sight of the cumulative effects of one activity on others, which is a key principle within Scotland's National Marine Plan.

One of the early initiatives we will look to progress with the Scottish Salmon Producers Organisation (SSPO) will be the reinvigoration of the sector's 2016 Community Charter http://scottishsalmon.co.uk/wp-content/uploads/2016/09/community_charter_2016_digital.pdf to ensure the sector can effectively demonstrate how the key commitments being made by the industry in relation to how they work with communities throughout Scotland are being delivered. The sector openly recognises that visible delivery of these commitments will benefit both their members and the communities they work in.

We will seek to agree with the sector a binding commitment to publish evidence each year of adherence to the Charter and progress made towards the attainment of social licence. This will bring both greater accountability and recognition of the work the sector is achieving.

Impact of Brexit

The Committee recognises the negative impact that Brexit may have on the access to EU export markets. It is particularly concerned about the ability of Scotland's food and drink sector to deliver fresh produce to European markets to current timescales and the impact tariffs may have on profitability. (see paragraph 73) The Committee also recognises concerns about the capacity of the salmon farming industry to retain and recruit staff given the likely loss of access to EU labour markets. The Committee notes that the industry may find it challenging to retain and attract the workers required, particularly in the salmon processing sector. (see paragraph 74)

RECOMMENDATION 5 The Committee calls elsewhere in this report for the highest possible environmental and fish health regulatory standards to apply to the farmed salmon sector in Scotland. However, it is concerned that these standards could become technically misaligned with those in the EU post-Brexit and that this could lead to problems in accessing EU markets. It therefore calls on the Scottish Government to indicate how it intends to work with the UK Government to ensure that this issue is addressed. (see paragraph 75)

SG response: We continue to engage with the UK Government and the other devolved administrations to highlight both the potentially disastrous implications of the Brexit negotiations and the need to ensure that our products can access markets easily and quickly, and certainly not to the detriment of the existing regime. We would

assure the Committee that we are doing everything possible to maintain current environmental and fish health regulatory standards for the farmed salmon sector in Scotland and that we will continue to ensure that any future framework will, as a minimum, replicate that of our European partners. Currently, as the Committee will be aware, we are working to ensure domestic fish health legislation is operable on leaving the European Union. In parallel, we continue to work with our UK counterparts and the Commission concerning EU animal health legislation which will enter into force in April 2021.

As I am sure the Committee is aware, the importance of animal health and biosecurity was reported on by the House of Lords European Union Committee – Brexit plant and animal biosecurity, in October last year: <https://publications.parliament.uk/pa/ld201719/ldselect/ldeucom/191/191.pdf>

The UK and Scotland Chief Veterinary Officers (CVOs) recently hosted a workshop with a vision of having the best animal health surveillance in the world.

This Government will continue to keep the Scottish Parliament fully aware of our engagement on these issues, many of which, of course, have wider implications than just for our aquaculture sector. The sector have already made it clear that the spectre of a no deal scenario raises concerns around the potential delay and disruption at UK ports resulting in a significant reduction in flow of goods; the inability to trade in salmon due to prohibitive trade barriers; inability to acquire appropriate certification, and/or potentially serious impacts on infrastructure (transport, cold storage etc.) capacity; as well as the inability to import necessary input goods such as feed, ova and smolts, veterinary products, packaging for transport, and fuel which could lead to substantial financial loss and job losses/significant socio-economic welfare impacts.

There are also very serious concerns regarding potential barriers to inward migration of EU labour which threaten to impose skilled staff shortages on the farmed salmon industry.

Workforce, skills and infrastructure

The Committee acknowledges the findings of the HIE report highlighting a range of skills gaps and recruitment and retention issues facing the industry. It notes that the report suggests that there is a pressing need to address these and commends its recommendations on how improvements might be made in education and training, developing leadership skills and in recruitment. (see paragraph 83)

RECOMMENDATION 6 The Committee also acknowledges the infrastructure constraints faced by the sector that were raised in evidence, particularly a lack of available housing, which can make it difficult to attract and retain staff. The Committee recognises that a lack of housing can cause difficulty for many businesses in rural and remote areas. It calls on the Scottish Government to work with enterprise agencies and local authorities to consider what work might be done to help ease this constraint. (see paragraph 84)

SG response: We are already working to address these two crucial issues – housing and it infrastructure.

We also welcome the role that businesses are playing in working with local authorities to develop existing and future housing stock – for example Highland Council with Mowi (formerly Marine Harvest) in locations around Fort William.

In addition the Scottish Government’s ambition is to make rural Scotland one of the best connected places anywhere in Europe. Our Reaching 100% (R100) programme is a plan to extend superfast broadband access to every home and business in Scotland, and we have focussed procurement for R100 in rural areas, where it is needed most. A total of 93% of homes and businesses across Scotland already have access to superfast broadband, and we are investing £600m to go further.

There is no doubt that salmon farming and the wider aquaculture sector can play a key role in attracting more young people to live and work in remote rural areas, as evidenced by the Scottish Salmon Producers Organisation (SSPO) which found that a third of the Scottish salmon farming workforce is aged under 30. One of the key pillars of Scotland’s Food and Drink Growth Strategy remains people and skills. The Strategy recognises the need for new and existing talent, and people open to learning ‘able to use intelligence, best practice or innovation to improve what they do.’

Currently, Scottish Planning Policy (SPP) sets out that planning authorities should actively manage the housing land supply, and work with housing and infrastructure providers to prepare an annual housing land audit as a tool to review and monitor the availability of effective housing land. The Planning Bill currently before Parliament is part of a wide-ranging package of reform which aims to strengthen planning’s contribution to inclusive economic growth and delivery of development. Following the passage of the Bill through Parliament, we will be reviewing National Planning Framework (NPF) and Scottish Planning Policy and have commissioned research to inform the development of a revised rural planning policy to 2050. That research will explore the current challenges and future opportunities for land use diversification in rural Scotland, and will consider how planning policy can best support strong and vibrant rural communities and economies in the coming years.

The Committee will also be aware of the recent consultation launched by SEPA on its Housing Sector Plan which acknowledges that getting our housing stock right is a crucial endeavour and explains that they are considering how best they can play a specific role.

Branding and accreditation

The Committee recognises the importance of the Scottish brand in selling a wide range of food and drink products, including salmon, both abroad and in the UK. This brand is built upon a high quality product and robust environmental and regulatory standards. (see paragraph 96) The Committee notes that the challenges referred to elsewhere in this report could and may be affecting consumer’s perceptions of the product. To maintain the Scottish brand, Scotland’s salmon farmers must excel in responsible and sustainable production methods and communicate this effectively to consumers, retailers and other stakeholders. (see paragraph 97)

RECOMMENDATION 7 Many marketing and quality assurance accreditation schemes exist for farmed salmon. These often set more stretching environmental standards than are currently in place in Scotland. The Committee calls on the Scottish Government to take the requirements of existing accreditation schemes into account when considering regulatory change to establish where alignment might be appropriate and feasible. (see paragraph 108)

RECOMMENDATION 8 The Committee calls on industry representatives, accreditation bodies, retailers and other stakeholders to work together to consider ways in which clarity and simplicity for consumers in a potentially confusing accreditation landscape can be provided. (see paragraph 109)

SG response (recommendation 7-8): We agree that more can and should be done to streamline and create a readily identifiable quality mark and brand for Scottish salmon. Discussions are already underway through the Prince of Wales Sustainability Group (of which the Scottish Government is a member) on the Aquaculture Stewardship Council (ASC) standard, which has a focus on the environmental, social and fish health impacts of farming and which requires farms to show that they actively minimize their impact on the surrounding natural environment, care for their employees and work with the local community (our response to Recommendation 1 regarding the Community Charter are pertinent in this regard). We have already begun to discuss options around a sustainability dashboard and performance indicators with a wider range of stakeholders with an interest in this area.

We will also encourage the Aquaculture Industry Leadership Group (AILG) to lead on this and how we will take account of the recent consultation on EU marketing standards for fishery and aquaculture products

https://ec.europa.eu/info/consultations/public-consultation-eu-marketing-standards-fishery-and-aquaculture-products_en 17 July 2018 - 9 October 2018.

Clearly also supermarkets have a role and experience to contribute to this and they will be included in our discussions. The Committee will be aware that Scottish Farmed Salmon has held Protected Geographical Indication (PGI) since 2004. PGI is awarded by the European Commission and is an initiative which protects and promotes the designation of a quality food or farmed product, linked to the name of a region, a specific location or, in exceptional cases, that of a country. Every effort must be made to ensure that this level of premium endorsement does not become yet another victim of Brexit.

Challenges facing the farmed salmon industry - Farmed salmon mortalities

The Committee understands that there will be a level of mortality in all livestock production. It recognises the challenges that the industry faces in managing a range of fish health and welfare issues that contribute to increasing mortality levels. (see paragraph 145)

RECOMMENDATION 9 However, the Committee considers the current level of mortalities to be too high in general across the sector and it is very concerned to note the extremely high mortality rates at particular sites. It is of the view that no expansion

should be permitted at sites which report high or significantly increased levels of mortalities, until these are addressed to the satisfaction of the appropriate regulatory bodies. (see paragraph 146)

SG response: Fish farm mortality and veterinary records will continue to be inspected by Scottish Government Fish Health Inspectors during onsite inspections and a mechanism remains in place for the reporting and investigation of welfare issues by the animal and plant health agency. It is disappointing that in recognising the challenges of mortalities the Committee has not equally recognised the sector's efforts to reduce the number of incidents and levels over the last 12 months.

Notwithstanding progress made in recent years, we acknowledge that performance across the sector is variable – we want to see current levels of mortalities continue to reduce and this is an area where the sector clearly wishes to see more and faster progress. A better understanding of the environmental drivers and impacts of plankton events is also required to improve advice and prediction of risk of mortality.

As the Committee will have noted from the evidence provided, mortality occurs in all forms of animal farming. Where these mortalities can be managed and prevented then they clearly should be. There will be occasions where control is difficult e.g. in the case of emerging diseases which require investigation and innovation to understand and to develop control. In addition, environmentally-driven disastrous mortality events are difficult to predict. It is not clear how the committee's recommendations would assist in such circumstances.

We recognise the importance of gill health to overall fish health and rates of mortality. That is why gill health takes prominence in Scotland's 10-Year Farmed Fish Health Framework. Gill health is an internationally significant issue and the Scottish Aquaculture Innovation Centre is spending £3.5 million to improve gill health and resilience of Scottish farmed salmon.

It is difficult to see how an 'acceptable' level of mortality could be defined nor how that would be appropriate, given the different circumstances in which mortality events occur. The Government's key objective remains to ensure that we have a mechanism in place to address these concerns quickly and effectively to protect fish health and welfare and retain consumer confidence; this is a core aim of Scotland's 10-year Farmed Fish Health Framework. One of the key challenges will be to develop a well-resourced research base to investigate causes of emerging disease and make the epidemiological analysis required to identify options for prevention and control as quickly as possible.

RECOMMENDATION 10 The Committee welcomes the statement in the Scottish Government's Fish Health Framework that ambitious targets should be agreed "to achieve a significant and evidenced reduction in mortality for salmon and trout" and that these should be world-leading. However, it is strongly of the view that practical action is also required and that there should be a process in place which allows robust intervention by regulators when serious fish mortality events occur. It considers that this should include appropriate mechanisms to allow for the limiting or closing down of production until causes are addressed. (see paragraph 147) The Committee is in no doubt that there needs to be far greater transparency in reporting mortality rates and disease outbreaks at salmon farms. Whilst it welcomes the publication by the SSPO

of monthly mortality data for each salmon farm in Scotland in August 2018, it notes that this information is very limited and does not provide detailed information on the causes of mortality on each farm. (see paragraph 148)

The Committee notes the Scottish Government's Fish Health Framework (FHF) proposal to develop a consistent reporting methodology for farmed salmon mortality, and to move towards the production of pro-active open site reporting of mortality statistics. It considers that this initiative provides an opportunity to develop proposals which will build on and enhance the information which the industry has recently started to provide on a voluntary basis. (see paragraph 149)

SG response: We are currently considering further opportunities for data gathering and reporting through the Framework Group and sub-groups. We will take into account the Committee's recommendation in the work of the Farmed Fish Health Framework.

In addition to onsite inspections the Committee will be aware of the mortality reports received by Scottish Government's Fish Health Inspectorate. In the interim these will be published monthly in arrears on the Scottish Government webpages.

RECOMMENDATION 11 The Committee considers it to be essential that this work delivers high levels of transparency that will provide confidence to all stakeholders. It therefore recommends that the information provided in future should provide an accurate, detailed and timely reflection of mortality levels including their underlying causes across the whole sector. It should also incorporate a mechanism for reporting where early harvesting has been carried out because of a disease outbreak. (see paragraph 150)

SG response: As outlined previously, we will consider this recommendation in the Framework discussions. This will include options around web-based and real-time site reporting.

RECOMMENDATION 12 The Committee calls on the FHF working group to seek the views of all industry, scientific, environmental and other stakeholders to ensure that the methodology that it is tasked with developing for reporting mortalities is sufficiently robust. It is strongly of the view that it should be a mandatory requirement for all farmed salmon producers to provide this data. (see paragraph 151)

RECOMMENDATION 13 The Committee further recommends that there should be coordination with the data that is to be provided on sea lice infestation levels to ensure that a package of data is available which provides an up-to-date and comprehensive overview of all fish health, welfare and treatment issues across the sector. (see paragraph 152) The Committee notes the concerns expressed about the transportation and disposal of dead fish, and some members noted negative media reports on the matter. Whilst the Committee has not received any substantive evidence that points to any particular weakness or failing in the specific regulatory regime which covers such matters, it seeks reassurance that it is being both complied with by producers and properly enforced by regulators. (see paragraph 153)

RECOMMENDATION 14 The Committee therefore recommends that a review should be conducted by the Animal and Plant Health Agency of the relevant regulatory and

enforcement regime which applies to the transportation and disposal of dead fish to ensure that it remains fit for purpose. This recommendation is consistent with the Committee's general view that there should be a strengthening of regulation which applies to the farmed salmon sector. (see paragraph 154)

SG response (recommendation 12-14): We recognise the concerns that have been expressed about mortality levels within aquaculture and this is one of the key work streams in the Farmed Fish Health Framework and its four working groups. Indeed, the willingness of the industry to acknowledge and address this issue, and the efforts they have been making to reduce mortality levels, are welcome. This is a complex area and one that has to be addressed pragmatically, but clearly there is a requirement to be able to take action when a failure is evidenced.

The transport of ABPs (including Salmon morts) are covered by the Animal By-Products (Enforcement) (Scotland) Regulations 2013. Salmon morts (as with other farmed fallen stock) are category 2 animal by-products (ABPs). Options for disposal of this type of material includes incineration, co-incineration, anaerobic digestion, composting, ensiling.

The requirements under these regulations, regarding transport and documentation, have already been provided under paragraph 143 of the report:

'Animal by products must be collected, identified and disposed of without undue delay. They must be transported in sealed new packaging, covered leak-proof containers or special vehicles. Dedicated containers must be used or where they are not they must be cleaned and disinfected after each use to prevent cross contamination. Mixtures of different categories of animal by-products must be treated in accordance with the rules relating to the highest risk material and labelled accordingly.'

A commercial document must accompany each consignment and these are used by the Animal and Plant Health Agency (APHA) for tracing movements of consignments between locations. Records must be retained by the operators involved in transportation and handling of ABPs for 2 years. Operators handling (including transportation) of ABPs must be approved or registered by the Scottish Government and will be subject to risk based inspection where appropriate.

If non-compliance with the regulatory requirements is identified at risk based inspection or through tracing of consignments then APHA can issue notices requiring corrective actions to be undertaken. If there is an immediate issue to public or animal health then immediate restrictions can be placed on the operator and appropriate actions taken to mitigate the risk. If necessary the formal enforcement action can be taken by local authorities.

We will discuss with all interested parties the outline of a broader review of the transportation and disposal of dead fish, and will advise the Committee of our conclusions.

Gill Health

The Committee does not underestimate the serious challenge which gill health disease presents to the industry. Indeed, it has difficulty in understanding how expansion of the industry can reasonably occur if this issue is not satisfactorily resolved. (see paragraph 163) The Committee notes that, as suggested by many witnesses, one of the primary factors contributing to the increase in the prevalence of gill disease is thought to be rising sea temperatures. It considers that the prevailing sea temperature may also become a discussion point around the location of salmon farms in future and whether siting these in deeper, colder water might assist in overcoming the challenge presented by complex gill disease. (see paragraph 164)

The Committee welcomes the prominence given to the gill health issue by the Scottish Government in the Fish Health Framework and its focus on developing a clearer understanding of its causal factors and a treatment approach to mitigate its effect. However, given the acknowledged complexities of this disease and the limited knowledge which exists as to its causes, it would appear that this is not an issue that will be resolved easily or quickly. (see paragraph 165)

Sea Lice

The Committee notes the variety of actions and interventions being undertaken by the sector to address the significant challenge presented by sea lice infestation. However, it is clear that the industry has not as yet identified a means to fully and effectively deal with this parasite. (see paragraph 193) The Committee welcomes the wide-ranging proposals in the FHF sea lice workstream, such as the review of voluntary sea lice compliance policy, including reporting mechanisms; the development of sea lice modelling; and an exploration of the potential benefits of site consolidation. (see paragraph 194)

RECOMMENDATION 15 The Committee notes the various views expressed in evidence relation to the different sea lice trigger levels and thresholds that are applied by the industry itself and by Marine Scotland for reporting and intervention purposes. It considers that the work of the FHF provides an opportunity to remove confusion around this issue and develop proposals that are appropriate both to the FishHealth management needs of the Scottish industry and to the regulatory regime. It considers, however, that these should be challenging and set a threshold that is comparable with the highest international industry standards. (see paragraph 195)

SG response: It is anticipated that the review of the sea lice compliance policy will consider this issue from the perspective of health/disease of farmed fish where the average number of lice per fish is important. The Salmon Interactions Working Group are also currently in the process of looking at this from the wild salmon perspective recognising that the number of sea lice per farmed fish is only one factor to take into account and that the location, geographic area and overall number of fish and biomass are part of the consideration. We will update the Committee on this work in due course.

RECOMMENDATION 16 Whilst the Committee recognises that it will take time for the outcomes of the FHF sea lice workstream to emerge, it is strongly of the view that

there should in general terms be a move away from a voluntary approach to compliance and reporting with regard to sea lice infestation. The working group should therefore seek to bring forward proposals which make compliance and reporting a mandatory requirement. (see paragraph 196)

SG response: This forms part of the review of the sea lice compliance policy. We will take this recommendation into account and update the Committee in due course.

RECOMMENDATION 17 The Committee notes the concerns expressed in evidence that enforcement action in relation to breaches of sea lice levels has not been sufficiently robust to date. It is therefore of the view that if the revised compliance policy is to be effective it must be robust, enforceable and include appropriate penalties. (see paragraph 197)

SG response: We will consider recommendations 15 to 18 as part of the review of the sea lice compliance policy.

It is important to reiterate that Marine Scotland has never set a trigger level for sea lice. Instead the reporting and intervention levels are used by the Fish Health Inspectorate (FHI) to assess the actions which individual companies and sites require to demonstrate that they have satisfactory measures in place for the prevention, control and reduction of parasites.

However, the 10-Year Farmed Fish Health Framework recognises that a more strategic approach is required to deal with existing and future disease challenges and that there will always need to be a suite of options available to the sector to manage these challenges.

RECOMMENDATION 18 The Committee also considers it to be essential that appropriate staff and financial resources are provided by Marine Scotland to ensure that compliance is effectively monitored and enforcement action taken where required. (see paragraph 198)

SG response: We note this recommendation. The level of resource and the best mechanism required to ensure effective monitoring and enforcement of compliance forms part of the current review of the sea lice compliance policy.

Sea lice data

RECOMMENDATION 19 The Committee welcomes the recent voluntary commencement of sea lice data provision by the SSPO on an individual farm basis. However, it agrees with the ECCLR Committee's position that the provision of sea lice data should in future be mandatory for all salmon farms in Scotland. (see paragraph 213)

RECOMMENDATION 20 The Committee notes that the SSPO produces sea lice data 3 months in arrears, whereas such data in Norway is produced weekly in arrears. It considers that sea lice data in Scotland should be published in a similarly timely fashion, as close as possible to the collection date. (see paragraph 214)

RECOMMENDATION 21 The Committee also considers that it is essential that the data provided should be that which is required to inform the regulatory and enforcement regimes, as opposed to that which the industry itself takes it upon itself to produce. (see paragraph 215)

RECOMMENDATION 22 The Committee is strongly of the view that, in order to increase transparency, there needs to be a significant enhancement in the way sea lice data and other key information related to the regulation of salmon farming is presented. It considers that a comprehensive, accessible reporting system of a similar standard to that which is already in operation in Norway should be introduced in Scotland. (see paragraph 216)

RECOMMENDATION 23 If the industry has aspirations to develop and grow, having a comprehensive reporting system which is transparent, reliable and, above all, trusted can only serve it well. The Committee is therefore of the view that there should be a suite of data available covering mortality, sea lice infestation, medicine application and treatment information. (see paragraph 217)

RECOMMENDATION 24 The Committee recognises that there would be a cost element in developing and operating such a system but is of the view that this should not preclude this work being taken forward. It considers that the associated costs should be borne by the industry, and calls on the Scottish Government to discuss with industry representatives how this might be achieved. (see paragraph 218)

RECOMMENDATION 25 The Committee recommends that the working group charged with taking forward the FHF sea lice work stream should consider the production and presentation of sea lice data as an integral part of its work and bring forward proposals in line with the Committee's views. (see paragraph 219)

SG response (recommendation 19-25): As the Committee will be aware, openness and transparency are core themes throughout the Farmed Fish Health Framework. We will consider these recommendations as part of work to explore enhancements to public reporting through this Framework. Marine Scotland is already considering how it can share more data publicly and whether to become the host for any reporting data.

In the interim, sea lice information which Marine Scotland holds will be published from March 2019 onwards, monthly in arrears. We recognise the importance of better access to data from a research/science, compliance and public accountability perspective. It is equally important that we are clear what suite of data we require across the regulatory partners and why; that we avoid duplication and inconsistencies where the need is not clear or the methodologies are not optimal; and that we maximise the resource available to all. This is also an opportunity to declutter the landscape and to look at what data is already being provided to other stakeholders, including academic and research institutions.

Sea lice and the use of 'cleaner fish'

The Committee acknowledges the benefits that cleaner fish may have for the salmon industry. However, it recognises that these benefits can only be achieved through

careful management of the environmental implications and sustainable use of cleaner fish stocks. (see paragraph 246)

RECOMMENDATION 26 It endorses the ECCLR recommendations on cleaner fish and agrees that there is an urgent need for an assessment of future demand as well as all associated environmental implications of the farming, fishing and use of cleaner fish. (see paragraph 247)

RECOMMENDATION 27 The Committee welcomes the Scottish Government's commitment to "assess whether management measures are appropriate and proportionate to the current and anticipated future levels of sustainable wild wrasse fishing in Scotland" as part of its Fish Health Framework. It would urge the Scottish Government to complete this assessment as a matter of urgency. (see paragraph 248)

RECOMMENDATION 28 The Committee strongly recommends that the Scottish Government consider the need for regulation of cleaner fish fishing to preserve wild stocks and avoid negative knock on impact in local ecosystems. (see paragraph 249) The Committee welcomes the recent developments in industry breeding programmes as it is aware of the long period required for wrasse to reach sexual maturity. It also welcomes the potential for international cooperation and knowledge sharing on this issue. (see paragraph 250)

SG response (recommendation 26-28): The Committee will be aware that a range of voluntary control measures for the wild wrasse fishery were agreed between Marine Scotland and the salmon farming sector earlier this year. These measures include minimum and maximum landing sizes, limits on the number of traps that can be used, and the recording of catches. In addition, the wrasse fishing sector and the salmon farming sector have agreed to assist and cooperate with Marine Scotland Science to further understand the wild fishery for wrasse in Scotland and ensure its sustainability.

We are, for example, currently scoping the feasibility and resource requirements for a staged process to improving the data base for stock assessments over the next 3-5 years. The first stages include the development of a pilot project establishing approaches to facilitate the provision of essential data on landings and fishing locations by the industry, and the development and implementation of a well-supported scientific observer programme (including the recruitment and resourcing of 3 new observers) to generate additional biological data from the commercial fishery. We note that the observer programme will require buy-in and cooperation from the industry, as currently pertains in the offshore whitefish fleet. Initial conclusions from the pilot project will be available by the end of 2019. Complementary work on the development of fishery-independent surveys and suitable assessment methods will also be initiated over the 3-5 year time frame.

The framework working group will also continue work to map out future wild caught cleanerfish demands, as the industry moves to significantly increase production of hatchery reared cleanerfish for use in salmonid farming.

Environmental impact of salmon farming – Waste

RECOMMENDATION 29 The Committee believes that it is essential that the issue of waste collection and removal is given a high priority by the industry, the Scottish Government and relevant agencies. It is clearly one of the main impacts on the environment and needs to be addressed as a matter of urgency. (see paragraph 275)

RECOMMENDATION 30 The Committee is concerned that the announcement of SEPA's proposals for a new regulatory framework for managing the waste input to the marine environment from fish farm cages, as part of the outcomes of its wider sectoral review, was delayed until November 2018, shortly before this report was finalised. This meant that the Committee was unable to consider the proposals in detail. However, the Committee notes that the proposed new regulations are intended to more effectively manage the waste from salmon farms and avoid adverse impact on the seabed and the biodiversity of sea. The Committee calls on SEPA to keep it updated on the output from its consultation on the proposed framework and ultimately on the detail of how this will be implemented. (see paragraph 276)

SG response (recommendation 29-30): SEPA published its consultation on a strengthened regulatory framework for marine cage fish farming on 7th November. With respect to organic waste discharges (fish faeces and uneaten food), the proposals included tighter environmental standards; greatly enhanced modelling requirements; much more environmental monitoring; and independent accreditation of the monitoring undertaken by farm operators. The consultation also emphasised that compliance would be non-negotiable and that SEPA would make appropriate use of its wide range of enforcement powers and its new enforcement team to ensure compliance across the sector.

The consultation closed on 24 December. Over 120 responses were received. During the consultation period, SEPA also held consultation events in 9 coastal communities, from Lochgilphead in the South to Lerwick in the North. Around 300 people attended these. Separate consultation events were held for fish farm operators; national non-government organisations; and other public bodies. SEPA is now in the process of finalising its Sector Plan and will update the Committee when it is published.

Medicine use

RECOMMENDATION 31 The Committee strongly believes in the benefits of transparency for the industry and those interacting with it. It endorses the ECCLR Committee's recommendation that any data and analysis gaps related to the discharge of medicines and chemicals into the environment should be addressed by both the industry and regulators. (see paragraph 290)

The Committee recognises the need to ensure that the licensing regime for medicines is fit for purpose and sufficiently robust to prevent environmental damage or impact on other species. It notes and welcomes the Fish Health Framework workstream which is dedicated to the licensing of fish treatment. (see paragraph 291) The Committee recognises that as farmers the industry must use medicines to treat illness or disease in their stocks. However, it notes with concern the conclusion of the recent SEPA

research which concluded that medicine from Scottish salmon farms “is significantly impacting local marine environments.” (see paragraph 292)

RECOMMENDATION 32 The publication of this research leaves the Committee in no doubt that effective regulation of medicine used by the farmed salmon industry is a requirement. In this regard, it welcomes the action by SEPA to the UK Technical Advisory Group (UK TAG) to make recommendations to the Scottish Government on new environmental standards for Emamectin Benzoate. It also calls on SEPA and the Scottish Government to similarly consider the environmental impact of other medicines by the industry. (see paragraph 293)

RECOMMENDATION 33 The Committee also recommends that information and data on medicine use by the industry should be made publicly available, on the same platform as that relating to sea lice and mortality rates. (see paragraph 294)

SG response (recommendation 31-33): As the Committee noted, the UK Technical Advisory Group is currently in the process of developing recommendations on new environmental standards for the sea lice medicine, emamectin benzoate, taking account of the latest scientific research. SEPA understands that this work is expected to conclude in the spring.

In the meantime, SEPA published an updated interim regulatory position on emamectin benzoate on 7th November. The updated position applies strict controls to all farm proposals that would result in an increase in the discharge of the medicine or the exposure of additional parts of the sea bed to the medicine.

SEPA’s consultation on its sector plan (see response to recommendation 30) also included a number of proposals for strengthening the regulatory framework it uses to control risks posed by other medicine discharges. SEPA is currently considering the responses to its consultation. Once it has taken into account the views and suggestions received, it is committed to implementing a strengthened framework with the minimum of delay. It is already working with others to take forward one of the proposals, that of improving the availability and accessibility of information about fish farms on Scotland’s aquaculture website.

Scottish Ministers will now propose secondary legislation to transfer responsibility for controlling discharges of medicines from well boats from Marine Scotland to SEPA. This will make SEPA the regulator of discharges of all wastes and medicines from marine cage fish farms; and enable a consistent and more integrated approach to controlling such discharges.

Deterring marine predators

The Committee notes the salmon farming industry’s action to reduce the number of seals shot and shares the aspiration that this should be reduced to zero. It notes that a range of methods to deter seals are being applied by the industry including physical net barriers and shields. (see paragraph 310)

RECOMMENDATION 34 The Committee shares the view of the ECCLR Committee that such physical barriers should be used ahead of deterrents such as Acoustic

Deterrent Devices which potentially have a harmful impact on cetacean species such as whales and dolphins. The Committee considers it important that the use of such devices is fully assessed and it welcomes the fact that Marine Scotland has been asked to review the science to inform future policy in this area. It looks forward to an update on this from the Scottish Government in due course. (see paragraph 311)

RECOMMENDATION 35 The Committee considers it to be important that this work results in the production of appropriate guidelines and best practice advice for use by the industry in responding to various scenarios, such as when seals are trapped in salmon farm cages or in nets. (see paragraph 312)

SG response (recommendation 34-35): Marine Scotland is currently reviewing all the available evidence in relation to the potential impacts of Acoustic Deterrent Devices (ADDs) on cetaceans. In addition, Scottish Government has recently commissioned a research project in partnership with Scottish Natural Heritage (SNH) which will deliver science-based industry guidance on the most effective use of ADDs to reduce seal predation while minimising disturbance to cetaceans. This guidance will complement similar work being undertaken by one of the Farmed Fish Health Framework Subgroups to develop standards for the use of non-lethal options for addressing seal predation at marine salmon farms.

In parallel, Marine Scotland continues to work with industry, academic institutes and other countries to investigate the effectiveness and feasibility of other non-lethal options and new technologies as they emerge to address the challenge. This will ensure that there is a suite of options available to the industry in recognition that there is no one size fits all and measures that are successful on some farms may fail on others.

RECOMMENDATION 36 The Committee also looks forward to an update from the Scottish Government on its investigations into how the upcoming legislation change in the United States regarding seal shooting may negatively impact on its imports of Scottish salmon. (see paragraph 313)

SG response: The Committee will be aware that Scotland will be required to demonstrate our commitment to working towards the requirements of the US MMPA Regulation by the end of 2019 and we will be happy to update the committee on this in due course.

Wild fish/farmed fish interactions

The Committee has heard from the industry that escapes do not currently appear to be a significant issue in Scotland. However, it cautions against complacency on this issue as there is potential for even a single escape event to have a significant impact on the genetic integrity of wild salmon. (see paragraph 345)

RECOMMENDATION 37 The Committee notes that strict penalties are in place in Norway to deal with escapes and recommends that appropriate sanctions should be developed and introduced in Scotland. (see paragraph 346) The Committee understands the concerns expressed by some in evidence that the presence of sea lice around salmon farms could be impacting on wild salmon migratory routes, in

particular on smolts. (see paragraph 354) The Committee acknowledges that there are likely to be a range of factors that have contributed to the decline in wild salmon stocks over recent decades, and considers that it is possible sea lice attracted by the presence of salmon farms could be one. However, it also recognises that there is a lack of definitive scientific evidence on this issue. (see paragraph 355) The Committee welcomes the Scottish Government initiative to set up a working group to look at existing policy and advice governing these issues and to produce recommendations on how interaction between wild and farmed salmon can be taken forward in the future. (see paragraph 356)

RECOMMENDATION 38 However, it suggests that there needs to be a recognition that any work taken forward on this issue in the short term may be hampered by a lack of scientific data. The Committee supports the proposal from the ECCLR committee for more research into the interactions between farmed and wild salmon, as a matter of priority, although it acknowledges the evidence heard which suggests that this may be difficult to deliver. (see paragraph 357)

SG response (recommendation 37-38): We believe we must continue to foster a responsible partnership between the aquaculture industry, local and national wild salmon interests and all parts of government to sustain this iconic fish for generations to come.

We are committed to developing and implementing evidence-based policy with solid foundations drawn from the best available science to infer likelihood of impact by farmed salmon on wild salmon. These considerations are being addressed in the Salmon Interactions Working Group and the group is developing a wild salmon action plan.

In addition, we strongly support and welcome efforts by the aquaculture industry to finance the improvement of local habitats in West Coast Rivers for the benefit of wild salmon and sea trout to increase the numbers of smolts and thereby either mitigate any potential impacts of industrial activity or enhance stocks of wild fish.

The Committee will also wish to note that we have jointly identified with Fisheries Management Scotland and its members 12 high level groups of pressures which, depending on local circumstances, impact on the conservation status of Scotland's wild salmon populations. These range from the impact of legal and illegal exploitation (including angling and netting); predation and competition; barriers to migration, either upstream and/or downstream; water quality, quantity and/or temperature; the habitat on both the river bank and river bed; invasive non-native species; coastal and marine developments to, as focused on by the Parliamentary inquiries, the potential impact of farmed sea lice and genetic introgression, such as resulting from farmed fish escapes.

The breadth and diverse nature of these pressures reflect the complexity and the wide range of factors which are affecting wild salmon populations on both the West and East Coasts of Scotland and indeed more widely across the North East Atlantic. Our on-going objective is to continue to work with our key partners, such as District Salmon Fishery Boards, Fishery Trusts, SEPA and SNH, to better understand and thereby more effectively tackle all of these pressures, taking into account affordability and practicality. Action alone on any single one of them, such as the impacts from

aquaculture, is therefore not a panacea that will resolve all challenges. We must continually seek to take reasonable and proportionate action, informed by the latest science, to address all these pressures.

For this reason, we are clear that while the Salmon Interactions Group has been remitted to look initially at interactions with fish farming it will, in time, move on to consider interactions with other activities which are imposing pressures on wild salmon.

We note the Committee's view on the application of penalties to deal with instances of escapes from farms. Instances of escapees are regrettable and an area where we have looked to make progress through the Technical Standard for Scottish finfish aquaculture which was published by the Scottish government in July 2015 and is currently being revised. Alongside establishing training requirements, the standard will help ensure all finfish farms in Scotland have the appropriate equipment and operational procedures to minimise the risk of escapes. We will give further consideration as to the appropriateness and enforceability of any penalties for such instances in the future.

On the specific point around genetic integrity, we recognise that interbreeding between escaped farmed salmon and wild salmon can result in changes to the genetic constitution of wild stocks, a process more commonly termed 'introgression'. However, the occurrence and extent of introgression in Scotland is not known and it is therefore important that this debate is informed by further research. Marine Scotland has already initiated a three year project that seeks to quantify levels of introgression resulting from farmed escapees mixing with wild Scottish Atlantic salmon populations.

RECOMMENDATION 39 The Committee also encourages both the farmed salmon and wild salmon sectors to share information and data as transparently as possible in order to improve understanding as to why wild salmon stocks are decreasing. (see paragraph 358)

SG response: This is already being addressed by the Salmon Interactions Working Group.

RECOMMENDATION 40 Although there is a lack of definitive scientific evidence of the various factors that are contributing to the decline of wild salmon stocks, the Committee is nevertheless of the view that a precautionary approach should be taken which will seek to minimise the potential risk to wild salmon stocks wherever possible. (see paragraph 359)

SG response: As we have outlined previously, the precautionary principle is applied throughout the planning process and in any other initiatives which have an impact on a protected species, such as wild salmon. We are actively developing strengthened arrangements based on best available science and will soon be introducing a pragmatic mechanism to measure any impact by farmed salmon on wild salmon, as outlined at the response to recommendation 42.

RECOMMENDATION 41 The Committee suggests that the siting of salmon farms is key to managing any potential risk to wild salmon stocks and ensuring that the sector is managed responsibly and sustainably. (see paragraph 360)

SG response: We would highlight the existing presumption that has been in place for a number of decades against siting salmon farms on the East Coast of Scotland. It also observes that despite this wild salmon populations are in decline along the East Coast as well as the West Coast of Scotland, and it further notes the complex range of pressures on wild salmon referred to in the response to recommendation 38.

However, it is acknowledged that aquaculture constitutes one of the pressures acting on wild salmon. The SEPA consultation on Finfish Aquaculture Sector Plan promotes the concept of siting new sites in more exposed locations. Sea lice modelling is also a tool used in respect of siting farms and forms part of the deliberations of the Farmed Fish Health Framework with regard to sea lice management on farms.

RECOMMENDATION 42 The Committee notes concerns expressed in evidence that none of the existing regulatory bodies currently has responsibility for the impact of salmon farms on wild salmon stocks. The Committee believes that clarity must be provided by the Scottish Government as to how this apparent regulatory gap will be filled and which agency will assume responsibility for its management. (see paragraph 361)

SG response: We acknowledge that there is currently a lack of clarity with regard to the regulatory arrangements that apply to the impact of salmon farms on wild salmon stocks and where the responsibility should lie in regulating this impact. This is a key reason for establishing the Technical Working Group to work in parallel with the Salmon Interactions Working Group. This technical group is tasked with developing a practical framework for assessing the level of risk posed to wild salmon and sea trout taking account of the best available scientific understanding and the precautionary principle. The technical group comprises experts from the regulators - Marine Scotland, SEPA, SNH and representatives of local authorities. These regulators have a wide range of existing regulatory powers and the Group will also consider how this risk framework can most effectively be applied in regulating marine cage fish farms by making appropriate use of these existing powers.

A key challenge for regulators is evaluating any risk posed by marine cage fish farms on wild fish via their effects on sea lice numbers, given the complex range of factors that have the potential to affect wild salmon stocks. However scientific knowledge has been increasing over the last few years as a result of work in Scotland and other salmon producing countries.

The Technical Working Group is aiming to prepare its proposals by the end of June for subsequent public consultation. In doing so, the Group will consider the practical steps, including additional requirements for supporting scientific evidence and analysis from Marine Scotland Science, to implement a clearer longer term regulatory regime for managing impacts of farmed salmon on wild salmon. The Group will consider the submissions made on this topic to the Committees.

However more immediately we will take pragmatic action to ensure that the arrangements for regulating fish farm developments are strengthened to provide proportionate and precautionary management of the risk to wild fish based on an adaptive management approach. Thus, as part of any future request for planning advice from now on Marine Scotland will expect an Environmental Monitoring Plan to be delivered as a condition of any consents for marine aquaculture planning applications. This Plan will stipulate that an effective monitoring regime should be put in place in the identified aquaculture farming area and will detail what its key components should be. This will then inform an ongoing process of adaptive management to manage future fish farm applications.

This approach will not only provide a swift strengthening of the protections in the planning process in the short and medium term but also a mechanism to inform the longer term determination of a regulatory framework in this area and thus become part of a staged approach to building a long-term set of arrangements to fill the current regulatory gap.

The format of the monitoring regime will be informed by a current project being developed by Mowi (formerly Marine Harvest) and Fisheries Management Scotland (FMS) and will also be considered by the Salmon Interactions Working Group before introduction. One aspect of these considerations will concern how this monitoring will be resourced and the resulting financial implications for the sector.

Collaboration between salmon farming and wild fisheries sectors

The Committee notes that significant friction exists between the farmed salmon and wild fisheries sectors in particular catchment areas close to wild salmon migratory routes, with disagreements focussing on the impact of salmon farms on wild fish health and stocks. (see paragraph 371) Whilst the Committee understands why such friction and mistrust develops, it recognises that the situation is not helped by the fact that there is a distinct lack of scientific evidence and data to support or dismiss claims. This further highlights the need for more research to be conducted on the reasons behind the decline in wild salmon stocks and the potential contribution that salmon farming may have on these. (see paragraph 372)

RECOMMENDATION 43 The Committee is of the view that there is a need for both sectors to co-exist and it considers it to be essential that there is greater collaboration to resolve local management issues and other areas of concern. (see paragraph 373) The Committee notes that there are examples of good relationships between the sectors in certain areas of Scotland. During its inquiry, the Committee was fortunate in being able undertake a fact-finding visit to hear at first-hand about innovative and collaborative working between a fisheries board and a farmed salmon operator on a project which aimed to boost wild salmon stocks. It is in no doubt that if issues of mutual interest to both sectors are to be properly managed, there needs to be close, constructive and effective engagement between representatives of both sectors on a widespread basis. This needs to occur at both a local level, between local fisheries boards and farmed salmon operators and at a national, strategic level between the relevant representative groups. (see paragraph 374)

RECOMMENDATION 44 The Committee recommends that mechanisms to encourage such collaboration between the sectors should be further developed and introduced. It further recommends that the Scottish Government's wild salmon interactions group should, as part of its work, address this matter as a priority. (see paragraph 375)

SG response (recommendations 43-44): We support the Committee's view and recognises that the divergence of approaches across the country has not always led to informed discussions and/or good day-to-day working relationships. We have asked the Salmon Interactions Working Group to take forward these recommendations.

The Committee will also be aware of the work of the Crown Estate Scotland which has looked to prioritise within its Corporate Plan (2017-20) initiatives to support collaborative interactions projects involving farmed and wild salmon (working with Fisheries Management Scotland (FMS) and Marine Scotland among others). Its annual report also contains a commitment of £25,000 each year (concluding in 2019/20) for a wild fish lice monitoring protocol pilot led by FMS and outlines their involvement in a partial closed containment feasibility investigation for finfish.

Location of salmon farms

RECOMMENDATION 45 The Committee shares the view of the ECCLR Committee that the siting of farms in the vicinity of known migratory routes for wild salmon must be avoided. (see paragraph 384) The Committee understands that there is at present only limited empirical scientific evidence to suggest that wild salmon are infected by sea lice as they pass salmon farms. However, it is noted that the Norwegian Government has taken the decision to act decisively on this matter. It applies a strict precautionary approach and does not issue licences for salmon farms in the vicinity of wild salmon routes. (see paragraph 385)

RECOMMENDATION 46 The Committee is of the view that a similar precautionary approach must be taken in Scotland to assist in mitigating any potential impact of sea lice infestation on wild salmon. It therefore recommends that there should be an immediate and proactive shift towards siting new farms in more suitable areas away from migratory routes and that this should be highlighted in the strategic guidance on the siting of salmon farms. (see paragraph 386)

SG response (recommendation 45-46): There are a number of factors that will be taken into consideration as part of any planning application. We recognise the wider discussions about appropriately located farms (in a broad context and not just in relation to migratory routes) and this is currently being addressed by the Salmon Interactions Working Group.

RECOMMENDATION 47 The Committee recognises that it will take time for the range of current activity by the Scottish Government (e.g. Fish Health Framework initiatives, consenting review) and regulatory bodies (e.g. SEPA finfish sector review) and action on the Committee's recommendations to be completed, with outcomes known, agreed and implemented. (see paragraph 387) Therefore, until this work is completed and the enhanced regulatory and enforcement regime is in place, the precautionary principle

should be applied in a meaningful and effective manner in relation to applications for new sites and expansion of existing sites. (see paragraph 388)

RECOMMENDATION 48 The Scottish Government should provide strong and clear leadership in ensuring that the precautionary principle is applied, producing appropriate policy and guidance documents as necessary. These should make clear that the potential impact on the environment, known wild salmon migratory routes and other species must be comprehensively and robustly assessed and fully taken into account as part of the consideration of salmon farm applications. (see paragraph 389)

RECOMMENDATION 49 The Scottish Government should support and assist planning authorities by producing planning guidance which sets out clearly how the precautionary principle should be applied and managed. (see paragraph 390)

SG Response (recommendation 47-49): As previously outlined, the precautionary principle has and will continue to be applied in a meaningful and effective manner, being a cornerstone of both Scotland's National Marine Plan and Scotland's Planning Policy. We will work with local authorities and SEPA to address concerns about the appropriate application of the precautionary principle. Indeed the recently established technical working group will look to develop a framework that would underpin any future planning advice. In the more immediate term action will be taken to ensure local authorities can respond to any applications for aquaculture development in a suitably precautionary way, as outlined in our response to Recommendation 42.

RECOMMENDATION 50 Support should also be provided to local authorities to enable planning committees to have access to appropriate training resources so that decisions on applications for salmon farms can be better informed. (see paragraph 391) The Committee is in agreement with evidence which suggests that taking a more strategic approach to the siting of salmon farms in Scotland would be beneficial, not least in identifying the environmental suitability of both inshore and offshore locations for such developments. (see paragraph 407)

SG response: If there is an identified training need we are happy to work with the local authorities to address any gaps. However we believe that the general thrust of the comments on the planning process do not recognise the robustness of local decision making and the fact that many of those involved in Local Authorities have a good understanding of the industry and are well versed with the issues at hand, including the evidential basis around the impact of farmed on wild salmon. A bigger concern remains continuity and retention of that expertise.

RECOMMENDATION 51 It is therefore of the view that the Scottish Government should, as a matter of priority, initiate a spatial planning exercise with a view to developing strategic guidance specifying those areas across Scotland that are suitable or unsuitable for siting of salmon farms. This work should take full account of existing strategic documents such as the Marine Plan, and incorporate an assessment of the potential impact of salmon farms on Marine Protected Areas (MPAs) and Priority Marine Feature (PMFs) and the species which inhabit them. (see paragraph 408)

The Committee recognises that such work will require input from the wide range of regulatory and advisory bodies which have responsibility for or engage with the sector

and may therefore take some time to produce. However, it notes that Marine Scotland is already working to develop heat maps which would identify areas suitable for farmed salmon expansion and is of the view that this work might usefully inform a wider spatial planning exercise. (see paragraph 409)

RECOMMENDATION 52 The Committee acknowledges the role of planning authorities in considering and deciding on planning applications for salmon farms, taking into account a range of social, economic and environmental factors. However, it is of the view that strategic guidance on the siting of salmon farms should also be viewed as a material consideration in planning terms, which would help guide the industry in making applications and planning authorities in deciding on these. The Committee calls on the Scottish Government to consider how this might operate in practice and to consider whether any changes in planning guidance might be required. (see paragraph 410)

SG response (recommendation 51-52) - please see response to recommendation 42 and recommendations 47-49. We recognise the perceived limitations in the evidential basis on the impact of farmed on wild salmon and the need to move to a framework which enables local authorities and potentially others to make informed decisions going forward. That remains our intent utilising a science-led approach where possible. In addition, and by no means secondary, we will oversee the development of a competent monitoring regime to assess the ongoing impact of any successful application and to enable the operation of an adaptive management approach which can respond with agility to changing impacts over time. It is also important to consider developments in planning advice in the context of farming methodology and the associated relevant risks to wild salmonids, recognising that this will be one among a number of aspects which local authorities will wish to consider in determining any given planning application.

With regard to strategic guidance on the siting of salmon farms, the first review of Scotland's National Marine Plan in 2018 noted that future iterations of the National Marine Plan would be an opportunity to consider further the policies relating to aquaculture contained within the National Marine Plan. That process would appropriately include emerging conclusions from the SEPA Finfish Aquaculture Sector Plan. Following the passage of the Planning Bill through Parliament, we will be reviewing National Planning Framework and Scottish Planning Policy.

In the meantime we will look to meet with the Local Authorities, the aquaculture sector and stakeholders more widely to discuss a more strategic approach to sustainable aquaculture across their areas of accountability.

Potential relocation of existing sites

The Committee notes that as the salmon industry in Scotland has evolved in recent decades, farms may have been located in areas which are now recognised as being environmentally sensitive (such as MPAs or PMFs) or are less well-suited to production for a variety of reasons. It welcomes the fact that some operators are already actively looking to relocate poorly sited farms or to consolidate farms in less sensitive areas. (see paragraph 418)

RECOMMENDATION 53 However, the Committee considers that there should be immediate dialogue with the industry to identify scope for moving existing poorly sited farms. It recommends that this should be led by Marine Scotland and encouraged with appropriate incentives for operators, such as giving favourable consideration towards allowing increased capacity at replacement sites that are known not to be environmentally sensitive. The Committee considers it to be important, however, that there is no deviation from due process in terms of granting approval for replacement sites. (see paragraph 419)

Challenges of moving to more exposed sites

RECOMMENDATION 54 The Committee recommends that work to examine the scope for siting salmon farms in suitable offshore and other locations where there are higher energy water flows should also be treated as a high priority by the industry. It acknowledges that there are significant technological challenges associated with locating farms in these areas, as well as risks in terms of workforce health and safety. However, it also notes the benefits this could bring in terms of addressing fish health issues, reducing the environmental impact of waste and providing scope for the industry to develop higher capacity sites. (see paragraph 426)

RECOMMENDATION 55 The Committee further recommends that the Scottish Government should consider how the regulatory framework which applies to the industry might need to be adapted to suit the particular circumstances of offshore aquaculture. (see paragraph 427)

SG response (recommendations 53-55): Consideration is already being given to the development of offshore aquaculture in relation to the existing regulatory framework and potential future operating practices, not least as further enquiries are being made around the feasibility of future projects and potential geographical locations (including the promotion of area management improvements and high energy locations) but with a clear understanding that we should not simply export challenging issues from one location to another. The impact of farm location on fish health is also being considered by the Farmed Fish Health Framework in relation to more exposed locations. This links with the development of sea lice dispersal modelling that will help inform locations that mitigate potential negative interactions between farmed and wild fish.

In parallel we will also look at the drivers for and the implications of the retention of unused consents, and explore with the sector how they might be reinvigorated to drive innovation in farming methods and/or be designated as areas not open to future use to the sector.

Closed containment

The Committee recognises that the development of closed containment facilities could have a significant positive impact on the farmed salmon industry and has the potential to address many of the environmental challenges it faces. However, it also recognises that the development of this technology has its own challenges in terms of large scale roll out. These include its physical footprint whether on land or at sea; energy costs; carbon output; stock welfare issues; and the potentially negative impact on perceptions of provenance and quality. (see paragraph 445)

RECOMMENDATION 56 The Committee endorses the ECCLR Committee's recommendation for urgent research on the subject and the consideration of ways to incentivise the industry to explore further use of the technology. However, it is aware that RAS is not the only closed containment option and would encourage wider research on alternative technologies. (see paragraph 446)

SG response: We see it as vital that the sector itself leads the way in identifying and developing technological innovation that will enable future sustainable growth, with Government, academia and other agencies supporting that endeavour through appropriate incentives. The Scottish Aquaculture Innovation Centre is already undertaking significant work on potential innovation in the sector including closed containment, which as a concept is not new and officials have met with a number of parties who are interested in developing such technology in Scotland (recognising that currently there is no evidence of commercial viability of wholly closed containment). Indeed there are many examples of companies looking at alternative farming approaches and differing locations.

In addition, the Scottish Government through Marine Scotland and its enterprise agencies is actively engaged with SAIC as it looks to identify how innovation can be exploited by the sector to facilitate its sustainable growth, maximising the funding potential of the European Maritime and Fisheries Fund and other revenue streams. It would also be right to reference the number of Scotland City Deals which have incorporated a number of aquaculture research and development institutions as part of their bids. For example investment of £17 million will be undertaken through the Stirling and Clackmannanshire City Deal, which it is envisaged will create a new aquaculture innovation hub to support the University's pioneering aquaculture research, translating global growth into high quality local jobs. That in itself demonstrates the sector's commitment to research and innovation, the opportunity to maximise and export Scottish expertise and knowledge, but also the sector's appetite to invest for the long-term in Scotland, despite the uncertain political, policy, skills and funding context created by the prospect of EU exit and the increasing possibility of a no deal Brexit.

Climate change

The Committee acknowledges the wider impact of climate change and the challenges it brings to both the wild and farmed salmon sectors. It welcomes the Scottish Government's focus on climate change in its Fish Health Framework and looks forward to receiving early feedback on its progress. (see paragraph 450)

Research on the impact of salmon farming

RECOMMENDATION 57 The Committee notes that the ECCLR Committee's report identified a range of significant gaps in knowledge, data, analysis and monitoring around the adverse risk the sector poses to the environment. It strongly endorses the ECCLR Committee recommendation on the need for more research in these areas. (see paragraph 469)

RECOMMENDATION 58 However, the Committee acknowledges the challenges inherent in the collection and processing of this data. It calls on the industry and all

other relevant bodies and organisations to work together to overcome the barriers of the scale of the task and the challenge of securing appropriate funding for that research. In particular, it agrees that there should be a requirement for the industry to contribute finance, expertise and other relevant resources to independent research. The Committee calls on the Scottish Government to consider how an appropriate mechanism can be introduced. (See paragraph 470)

SG response (recommendation 57-58): Marine Scotland agrees that the evidence base needs to be strengthened. Identifying data gaps will form part of our wider considerations through the Farmed Fish Health Framework and other fora (see earlier response to recommendations 19-25), as well as the need for further research and the additional resource that may be required. It is important that as part of this work we appropriately prioritise key areas of work in the short, medium and longer term, recognising that resources are finite. We will explore with the sector and other stakeholders the nature of the additional research requirement and how this might be funded, bearing in mind the Committee's recommendation that the industry should contribute finance, expertise and other relevant resources.

We agree that the cost burden should be shared in pursuing this joint endeavour with industry but it should also be acknowledged that the sector already contributes significant investment to research and innovation.

The Committee will have been aware from the various evidence sessions that in its first three years of operation the Scottish Aquaculture Innovation Centre (SAIC) has overseen 14 projects worth a total of £11.41m, of which industry has contributed £6.99m, SAIC £2.88m and academia £706k. That alone demonstrates that the sector is already making sizeable contributions to independent research to address current and future challenges that may confront the industry. The sector also participate in many research projects and forums, both domestically and internationally, designed to motivate research in new and innovative areas, recognising that to be successful it needs to be dynamic and progressive.

Data provision is also important and while there are cases where data provision works well and provides benefits there is scope for greater cooperation to be achieved in this area between the public sector and industry. Thus SEPA is looking to enhance data requirements and Marine Scotland, which requires data for regulation and analysis in support of management, is exploring how this can be developed.

Regulation and consent

The Committee notes the views provided by stakeholders on the efficacy of the current regulatory and consenting regime. Whilst some of those who have commented consider it to be adequate, the Committee shares the views of the majority of those who provided evidence who consider that a more robust and integrated regime is required. (see paragraph 491) From the evidence it has received, the Committee has gained the strong impression that the farmed salmon sector in Scotland has been subjected to what might be described as "light touch" regulation and enforcement to date as the relatively young industry has developed. (see paragraph 492)

However, in recent years a range of fish health and environmental challenges have emerged and whilst it is clear that the industry is working hard to address these, the Committee is of the view that the regulatory regime has failed to keep pace with them. (see paragraph 493)

RECOMMENDATION 59 The Committee also notes and shares the concerns expressed in evidence that the current consenting and regulatory framework which is spread across several regulatory bodies is confusing and is poorly coordinated. It is of the view that the co-ordination of and interaction between the various elements of the regulatory regime needs to be significantly improved. The Committee recommends that Marine Scotland should be tasked with taking responsibility in delivering the necessary improvements and in taking on an overarching co-ordinating role. (see paragraph 494) It is also clear to the Committee that the application of visible enforcement by regulatory bodies has been limited. It is of the view that robust enforcement of regulatory standards is absolutely essential if they are to meet their intended purpose. (see paragraph 495) The farmed salmon industry is of significant value to Scotland's rural and wider economy. If this value is to be maintained and the industry is to grow, the Committee is in no doubt that it must be seen by consumers and markets to be meeting highest international production, fish health and environmental standards. It notes that should other producing nations operate under significantly more robust regulatory frameworks designed to raise standards, this could provide them with an advantage in terms of provenance. (see paragraph 496)

RECOMMENDATION 60 The Committee is therefore of the view that maintaining the status quo in terms of the regulatory regime in Scotland is not an option. It considers that there is a need to raise the bar in Scotland by setting enhanced and effective regulatory standards to ensure that fish health issues are properly managed and the impact on the environment is kept to an absolute minimum. The Committee therefore recommends that a comprehensively updated package of regulation should be developed by Marine Scotland and other regulatory bodies, both to ensure the sector will be managed effectively and to provide a strong foundation on which it can grow in a sustainable manner. (see paragraph 497)

The Committee is firmly of the view that a stricter regulatory and consenting regime that is also fair and proportionate - can only benefit the sector, helping to drive improvement and giving it confidence that it is meeting its environmental responsibilities. (see paragraph 498) The Committee is aware that some of the larger salmon farming companies in Scotland are already operating under a stricter regulatory regime in Norway and suggests that they would have little difficulty in making a transition should stricter regulations come into force in Scotland. Indeed, the Committee notes that some producers indicated in evidence that they recognise the benefits of enhanced regulation relevant to Scotland and would not be opposed to it. (see paragraph 499)

The Committee recognises that there are a range of current exercises such as the Scottish Government's consenting review; the consultation by SEPA on the new regulatory proposals set out in its draft Finfish Aquaculture Sector Plan; and the Fish Health Framework workstream which provide an opportunity to make tangible improvements to the way in which the sector is operated and managed. It welcomes this package of work and considers it essential that the outcomes from it result in

proposals for change in certain elements of the regulatory framework. (see paragraph 500)

RECOMMENDATION 61 However, the Committee calls on the Scottish Government to conduct a review of those other aspects of the regulatory framework that are not covered by these exercises. (see paragraph 501)

Role of SEPA in consenting and regulation

The Committee shares the view of the ECCLR Committee that the regulatory tools currently available to SEPA are neither adequate nor effective. It also endorses that Committee's concerns that SEPA has not been performing well in monitoring the environmental performance of the industry or in enforcing the regulations which relate to its responsibilities. (see paragraph 514) The Committee is concerned that the sector has shown very poor rates of compliance with SEPA's current standards. This is borne out by the results of its compliance assessment process for 2017 which showed an increase in the number of salmon farms which had failed to meet the required standards. (see paragraph 515) The Committee welcomes SEPA's acceptance that a strengthening of environmental protection measures is necessary and that proposals for delivering this feature in its draft Sector Plan. However, the Committee again states its concern that the publication of the sector plan was delayed and that it has therefore been unable to comment in detail on these proposals in this report. (see paragraph 516)

RECOMMENDATION 62 The Committee considers it to be essential that SEPA introduces a significantly enhanced regulatory and monitoring regime under which it will robustly and effectively enforce compliance with environmental standards. It therefore welcomes the inclusion in SEPA's draft sector plan of consultation proposals to more effectively monitor the environmental performance of the industry and, improve compliance levels. (see paragraph 517)

Regulator information and transparency

RECOMMENDATION 63 The Committee is of the view that a key part of any improvement in the enforcement of regulation should be the introduction of mechanisms to provide more open and transparent reporting of regulatory breaches. It is also strongly recommends that any changes to the enforcement regime should incorporate measures which will ensure that there is a move away from the self-assessment culture that appears to be prevalent at present. (see paragraph 521)

SG response (recommendation 59-63): We welcome the Committee's acknowledgement that there is already an extensive package of work underway to review and enhance the regulatory regime applying to aquaculture, ranging from the consenting review to the Farmed Fish Health Framework, the Salmon Interactions Work Stream and SEPA's draft Finfish Aquaculture Sector Plan. Where improvements are identified and agreed, we will work with partners to introduce these.

SEPA is currently responsible for protecting the marine environment from any discharge of organic matter or other chemicals from marine cage fish farms. Scottish Ministers have agreed to transfer responsibility for protecting the environment from

discharges from well boats from Marine Scotland to SEPA. This will result in SEPA being the environmental regulator for all discharges into the marine environment associated with marine cage fish farming. SEPA is already the regulator of all discharges into inland waters from hatcheries and freshwater pens.

SEPA is currently considering consultation responses to the proposals in its fin fish aquaculture sector plan for significantly strengthening how it regulates marine cage fish farms. It is committed to implementing a strengthened framework with the minimum delay once it has taken into account the views and suggestions it received.

SEPA believes it is important for all regulated businesses to monitor the environmental performance of their activities so that they can understand and effectively manage that performance. Consequently, its proposals in its sector include requirements for operators of marine cage fish farms to undertake significantly more and better environmental monitoring than at present. However, SEPA is also proposing to:

(a) require independent accreditation of the monitoring undertaken by operators to improve confidence in the quality of that data; and

(b) increase and strengthen the independent auditing and environmental monitoring it does to check that farms are complying with authorisation requirements.

Risks to wild fish (See also response to recommendation 42) - SEPA, Marine Scotland, local authorities and SNH are currently working together in a new technical working group to develop proposals for strengthening protection of wild salmon and sea trout. This work will include developing proposals for a coordinated and streamlined approach to the regulation of farms to deliver the appropriate protection.

Local authorities and the planning process

RECOMMENDATION 64 The Committee notes that the Scottish Government is currently undertaking a consenting review. It requests an update on this exercise, including details of whether the outcome is likely to impact on the role of planning authorities in considering applications for salmon farms. (see paragraph 530)

SG response: We are happy to provide this.

Financing of regulation

The Committee considers effective enforcement with appropriate penalties to be of significant importance in ensuring the industry complies with regulatory standards. It is also of the view that this is a necessary requirement should the industry wish to expand in a sustainable manner without causing damage to the environment. The Committee notes that SEPA now has additional tools at its disposal to raise revenue through enforcement action. However, it is concerned that it has taken four years since the relevant statutory powers were granted for these tools to be introduced (see paragraph 538). The Committee welcomes SEPA's statement in its draft Finfish Aquaculture Sector Plan that it will apply monetary penalties to those who fail to comply with its proposed strengthened regulatory standards (see paragraph 539).

RECOMMENDATION 65 The Committee notes the indication that consideration of licence auctions for farmed salmon sites will be included as part of the Scottish Government's consenting review. It also notes the Cabinet Secretary's suggestion that licence fee structures could be used in Scotland to incentivise the use of new technologies. However, the Committee cautions that careful thought would have to be given as to how the implementation of any such measures would ensure a fair market and avoid smaller operators and local communities being marginalised or excluded. The Committee calls on the Scottish Government to provide it with details of the outcomes of its consideration of these matters in due course. (see paragraph 540)

SG response: We are happy to provide this.

Cabinet Secretary for the Rural Economy
Cabinet Secretary for the Environment, Climate Change and Land Reform

January 2019