



OFFICIAL REPORT
AITHISG OIFIGEIL

Rural Economy and Connectivity Committee

Wednesday 18 November 2020

Session 5



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CONTENTS

	Col.
DECISION ON TAKING BUSINESS IN PRIVATE	1
SALMON FARMING INQUIRY (UPDATE)	2
EUROPEAN UNION (WITHDRAWAL) ACT 2018	59
Common Fisheries Policy (Amendment etc) (EU Exit) (No 2) Regulations 2020	59
Import of and Trade in Animals and Animal Products (Miscellaneous Amendments) (EU Exit) Regulations 2020.....	59
Official Controls (Animals, Feed and Food, Plant Health etc) Amendment) (EU Exit) Regulations 2020.....	59

RURAL ECONOMY AND CONNECTIVITY COMMITTEE

30th Meeting 2020, Session 5

CONVENER

*Edward Mountain (Highlands and Islands) (Con)

DEPUTY CONVENER

*Maureen Watt (Aberdeen South and North Kincardine) (SNP)

COMMITTEE MEMBERS

*Peter Chapman (North East Scotland) (Con)
*John Finnie (Highlands and Islands) (Green)
*Emma Harper (South Scotland) (SNP)
*Richard Lyle (Uddingston and Bellshill) (SNP)
*Angus MacDonald (Falkirk East) (SNP)
*Oliver Mundell (Dumfriesshire) (Con)
*Mike Rumbles (North East Scotland) (LD)
*Colin Smyth (South Scotland) (Lab)
*Stewart Stevenson (Banffshire and Buchan Coast) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Terry A'Hearn (Scottish Environment Protection Agency)
Charles Allan (Marine Scotland)
Anne Anderson (Scottish Salmon Producers Organisation)
Zoe Crutchfield (Marine Scotland)
Ben Hadfield (Mowi Scotland)
Mark Harvey (Highland Council)
Peter Pollard (Scottish Environment Protection Agency)
Tavish Scott (Scottish Salmon Producers Organisation)

CLERK TO THE COMMITTEE

Steve Farrell

LOCATION

The Sir Alexander Fleming Room (CR3)

Scottish Parliament

Rural Economy and Connectivity Committee

Wednesday 18 November 2020

[The Convener opened the meeting at 09:00]

Decision on Taking Business in Private

The Convener (Edward Mountain): Good morning, and welcome to the committee's 30th meeting in 2020. I ask everyone to make sure that their mobile phones are on silent.

The meeting will be conducted in a hybrid format, with some of our members and our witnesses participating remotely.

Agenda item 1 is a decision on taking business in private. The committee is asked to consider taking item 4 in private, to allow the committee to review the evidence heard on the salmon farming in Scotland inquiry update. Is everyone agreed to take that item in private? We are agreed.

Salmon Farming Inquiry (Update)

09:01

The Convener: Agenda item 2 is the salmon farming in Scotland inquiry update. The committee is taking evidence on progress towards the delivery of the recommendations in its 2018 report on its salmon farming in Scotland inquiry. We will hear evidence from two panels: we will hear first from the regulatory bodies and then from salmon farming interests.

In line with declarations that I have made before when we have considered the issue, I declare that I have an interest in a wild salmon fishery on the east coast. I do not think that anyone else wishes to make a declaration of interests.

We welcome the first panel. Terry A'Hearn is the chief executive of the Scottish Environment Protection Agency; Peter Pollard is SEPA's head of ecology; Mark Harvey is Highland Council's team leader on aquaculture; Charles Allan is fish health inspectorate group leader at Marine Scotland; and Zoe Crutchfield is head of the licensing operations team at Marine Scotland.

Our first questions are from John Finnie.

John Finnie (Highlands and Islands) (Green): Good morning. I would like to ask the witnesses to describe the changes that have been made to the regulation of fish farms and the enforcement regime for aquaculture since the committee's inquiry in 2018. Mr A'Hearn, can you comment on that, please?

The Convener: I am not sure that Terry A'Hearn's microphone has been activated yet.

Terry A'Hearn (Scottish Environment Protection Agency): I think that it has been activated now, convener.

There are a few key areas in which we have made changes since the committee's report. There are changes to the conditions that we apply in our licensing regime and to monitoring and assessment, and we take a tighter approach to compliance and enforcement. We have a new compliance regime and a new enforcement approach, including a new team, plus we do things such as unannounced inspections. My colleague, Peter Pollard, can give you more details on that.

We also have streamlined processes, with more work going on pre-application. We work with businesses to look at whether a site is appropriate, to try to cut out some of the unnecessary work on sites that are less favourable, and we talk about what sort of approach to technology or size of farm might apply at a particular site.

Peter Pollard can provide a little bit more detail on those issues, convener.

The Convener: Absolutely. Go for it, Peter.

Peter Pollard (Scottish Environment Protection Agency): We introduced a brand-new regulatory framework for marine fish farms in June 2019, based on a lot of consultation with various groups, including coastal community groups, the sector and wider non-governmental organisations.

The new regime has been in place for some 17 or 18 months. As Terry A'Hearn said, it includes much greater up-front, pre-application discussions, including consultation with communities at the pre-application stage and advice and help for operators to get the right information for the application so that we can assess it when it comes in. It also includes much more streamlined and simple permits that focus on the key environmental issues; they are simple to understand and easier for us to check compliance against. We have also been putting a lot of work into streamlining our determination processes to make sure that we determine applications as swiftly as possible.

John Finnie: Could I ask Mr Allan or Ms Crutchfield about the implications of the report and any subsequent changes for Marine Scotland, please?

The Convener: Charles Allan, do you want to speak on that first? You will be followed by Zoe Crutchfield.

Charles Allan (Marine Scotland): There was a great deal of consideration of the reporting of sea lice numbers. The reporting level was at three adult ovigerous lice and the enforcement level was at eight. The levels have been reduced to two and six respectively, with a change expected this year to two and four.

Further, with regard to sea lice reporting, a statutory instrument is in train literally as we speak—I believe that it will be laid early next month—which will require weekly statutory reporting of sea lice from all seawater aquaculture sites. That information will be submitted to Marine Scotland. Subsequent to its analysis and use in the regulatory process, it will be published as quickly as possible. As things stand, it is envisaged that it will be published weekly in arrears at the end of the reporting period.

The Convener: Zoe Crutchfield, do you want to come in? We will come back to sea lice later on, I suspect.

Zoe Crutchfield (Marine Scotland): On the regulatory regime, we have moved the licensing of wellboat discharge. Marine Scotland used to do just the wellboats; we have moved that now to SEPA, so SEPA now controls all discharges of

medicines and other treatments. I do not know whether my colleagues from SEPA would like to add anything to that.

The Convener: Probably not at this stage.

John Finnie: Thanks for those answers. I was going to ask about how Marine Scotland and SEPA might work collaboratively. I have raised the issue of wellboats with both and, indeed, with local authorities. How do Marine Scotland and SEPA work together? Are all existing farms now subject to new permit conditions? Mr A'Hearn, can you comment on collaboration between the two organisations, please—if, indeed, there is any?

Terry A'Hearn: We have put a lot of effort into trying to work more closely together. We always put effort into that, and we have put a lot more in since the committee's report. I meet regularly with the director of Marine Scotland. Peter Pollard can describe the specifics of what we have done on wellboats, for example, but I think that there is much better co-ordination and collaboration on a range of issues. Peter Pollard can explain a couple of the specifics, if that will help.

The Convener: Who is going to come in on that? Sorry, I am slightly struggling to hear who is being brought in. To help me, because my ears are not always that perfect, I ask members to say who they would like to bring in and I will try to do that. We will hear from Peter Pollard and then go back to John Finnie.

Peter Pollard: As Terry A'Hearn says, over the past year to 18 months we have done a lot more collaboration with Marine Scotland on a number of fronts, including helping to transfer the wellboats regime to SEPA as smoothly as possible. That has gone well and is now in place.

As you will probably hear later, we are working very closely with Marine Scotland on developing a new framework for managing the interaction between wild fish and sea lice from farms. We are also working on the aquaculture website with Marine Scotland. There is more to do, and we are continually looking at how we can strengthen co-ordination between us. We will continue to develop that over the next months and years.

John Finnie: Could the regulatory authorities talk about the locations where there were known and well-evidenced problems? Have those problems been rectified? Are all existing farms now subject to the new permit conditions?

I will wrap all my questions together, convener, so my final question is about the effect that the changes have had on the marine environment. That is for Mr Pollard.

The Convener: Mr Pollard is first, and then we will go to Mark Harvey to see whether he has something to add.

Peter Pollard: Our new regulatory framework with new permit conditions includes clearer standards and so on. Since June, the new conditions have been applied to all new applications for development, which involves some 44 farms.

We are in the process of transitioning all existing farms on to the new permit. During the Covid-19 outbreak, we have focused on helping the sector minimise impacts on the environment and on protecting staff and maintaining food supply and fish health. Therefore we paused the transition. We are about to restart the process, so over the next few months we will start to put all existing farms on to the new permit conditions.

In terms of the evidence of the effect of that work, as I say, we have 44 permits with new conditions that require much greater environmental monitoring to assess performance. Some of the monitoring information is now coming in, and it shows that the information that those farms are giving us about their performance is much clearer—there is much better understanding than before, which is good. As more farms go on to that system, increasing evidence of their environmental performance will come in.

John Finnie: I will push you on that. I know that you have more information, but what does the information tell you? Is the changed regime having an effect on the marine environment?

Peter Pollard: When we authorise new farms under the permit, we find that, as production at sea takes two years, we are into the second year before we start to see the effects. From the few returns that have come in so far, operators appear to be complying well with what we expected in terms of performance and staying within the limits that we set.

The Convener: Does Mark Harvey want to add to that?

Mark Harvey (Highland Council): Sorry—I lost the connection for a second there as the question was being put. Perhaps I can go back to say what has changed since the publication of the committee's report. I have to say that not a huge amount has changed for planning authorities because the emphasis has remained on utilising, through planning conditions, environmental management plans and adaptive management plans, which is what we were doing before the committee's inquiry.

However, what has changed is the adoption of minimum standards by Marine Scotland. In its consultation responses to us, Marine Scotland now sets minimum standards that it expects to see in environmental management plans, with an emphasis on not only the counting of on-site sea lice, but requirements for the monitoring of local

populations of wild salmonids and connectivity work in relation to the dispersion of sea lice from farms. I think that that has served to give EMPs, and EMP conditions, a good deal more weight—it felt like a statutory support for the approach that local authorities have been taking. Other than that, not a lot has changed in our work.

I think that, as a result of that approach, we have seen changes in the industry, with varying degrees of enthusiasm for EMP work and a degree of co-operation building up in the industry for area-wide joint fish EMPs and so on, although I have to say that very few of those have come to fruition.

09:15

The Convener: Thanks for that. John Finnie, are you happy with those answers? I would like to move on, unless you have a quick follow-up question.

John Finnie: Thank you, convener. As you know, I could ask questions all morning, but I am conscious that colleagues have many questions. I thank the witnesses for their answers.

The Convener: The next questions are from Peter Chapman.

Peter Chapman (North East Scotland) (Con): Good morning. My colleague John Finnie has just been investigating what SEPA has done and what it is doing now, but I am keen to look a wee bit further forward.

The regulatory framework states that SEPA is still reviewing elements of the framework. Can you outline the work that is still on-going to strengthen the regulations? When do you expect any new conditions to be applied? Perhaps Terry A'Hearn can take that first and then Peter Pollard can follow up.

The Convener: Terry A'Hearn, would you kick off on that? *[Interruption.]* Hold on. Sorry, Terry A'Hearn is still muted. *[Interruption.]* There seems to be a problem. Let me do this slowly. Terry A'Hearn will kick off on that, followed by Peter Pollard.

Terry A'Hearn: I will let Peter Pollard deal with the detail on all those questions, and I will not take up too much of the committee's time. In that progressive work, we have prioritised aquaculture over many other sectors because we know about the need to implement the new approach and system. Peter Pollard will be able to update you on where we are up to and what the next steps are.

Peter Pollard: I will pick a few areas that I think are important.

As we mentioned, we have recently taken on responsibility for wellboat discharges. We see

enormous opportunity to work with the sector on discharges of bath treatments, whether via wellboats or otherwise. In particular, we are helping to develop better ways for the sector to be able to demonstrate compliance, and for it to innovate through the introduction of medicine capture and treatment technologies, for example. That is a big area that we are developing. It includes a review of how we authorise medicines more generally, so that we modernise our process and make it suitable for supporting that direction of travel towards greater innovation and support in medicine use, while at the same time minimising impacts on the environment. That is one area that we are looking at very strongly.

We are also looking at using better techniques to audit compliance. Covid-19 has taught us a lot, so another area of development is work on using remote technologies to understand and look at farm performance in real time. It is very encouraging that the sector is very keen to work with us on that. That is another key development in compliance assessment and helping operators to demonstrate compliance with permit conditions that we are looking at.

We are also looking at how we can better report performance in the sector, getting information out on farm performance in a clear and simple way to the public and other interest groups. We are looking at improvements in how information that is reported to us is made available in accessible forms.

Peter Chapman: The potential move to the use of feed limits for regulating the organic output of fish farms has been highlighted to us. Are you actively looking at that? It sounds like a very important piece of work.

Peter Pollard: In a consultation that closed earlier this year, we consulted on options for controlling organic solids and the quantity of faeces that farms emit into the environment. We looked at two options, both of which do the same thing. They were the use of biomass and the quantity of feed that can be applied over a period of time. We looked at options that would give operators the easiest way to monitor and demonstrate compliance and which would give us the easiest way to independently assess that. It was a test of which would be easiest to monitor and independently assess.

One of the things that the operators came back to us with is that there have been real developments in how biomass in a pen can be monitored, so just before Covid, we agreed that we needed to go out and see that. We have not prioritised that type of outdoor work with operators because of Covid, but as soon as Covid is finished, we want to resume that work and look at modern advances in monitoring biomass. The real

test is how operators monitor compliance and how we assess it.

Peter Chapman: That is fine. Another big area of concern that we have flagged up is the data and analysis gaps in relation to the discharge of medicines and chemicals and the cumulative and additive effects of that. In the context of on-going developments, do we know what level of discharge of medicines or organic waste is harmful to the marine environment? What is the level of uncertainty in our knowledge of the marine environment's capacity to absorb and process different pollutants from fish farms? If we do not know the answer to those questions, is a search under way to find the answers?

Peter Pollard: We have done two things with our new framework. First, we have switched to very advanced computer modelling of discharges so that we can see—be it medicines or faeces—where the residues and solids go and where they accumulate. We have also used the new framework to update the environmental standards that we use for organic solids so that we can define what the marine environment can assimilate. We are much better able to test from a modelling point of view where the environment can assist with that, and we have post-authorisation monitoring to confirm that.

We are still doing some work on medicines. We have recently switched to advanced computer modelling for some of the bath-treatment medicines. We are looking at reviewing some of the medicines to make sure that we understand our capacity adequately.

The Convener: Charles Allan, do you want to come in on that?

Charles Allan: I do not think that I have anything to add to what Peter Pollard said about assimilation of medicines in the environment.

The Convener: In that case, we will go straight back to Peter Chapman.

Peter Chapman: I want to push Mr Pollard a wee bit further. You are working on the important issue of the ability of the marine environment to absorb the chemicals and the faeces. Do you have significant concerns that there is an issue here? Are you leaning towards the view that the marine environment can absorb such pollutants successfully? What is your gut feeling? Do you think that we are okay or are your concerns increasing as you look into the issue?

Peter Pollard: The first point to make is that different parts of the environment have different abilities to assimilate. Therefore, one of the key parts of our regulatory framework is to work out, when an application comes in, whether the environment that will receive the waste from that

development has the ability to assimilate it. That is part of the process.

For example, a couple of years ago concerns started to be raised about emamectin benzoate, which was being used as an in-feed medicine. The environment might not have the capacity to absorb that, so we have commissioned work to look at the standard for that. In the meantime, we have adopted an interim approach that is based on evidence, and a United Kingdom-level review of the standard is under way.

We constantly keep the issue under review. We get feedback from monitoring and other research, and we update our approach accordingly. We constantly try to do everything that we can to make sure that we base our work on the latest and best scientific evidence.

The Convener: I have a quick question on that. In our report, we mentioned the precautionary principle. You are saying that there is a certain level of pollution that you are prepared to accept, but are you still working on the precautionary principle to make sure that we never get to the tipping point in the areas that we are concerned about?

Peter Pollard: Yes. We very much take a risk-based approach to regulation. We assess what the proposal is and we ensure that it will comply with the environmental standards that are set to protect the environment. It is a risk-based approach that is based on environmental standards. Where there is any evidence that those environmental standards might be out of date and the science has moved on, we get a review of those standards, of the kind that I have described is under way on emamectin benzoate. In the meantime, we adopt a precautionary interim approach.

The Convener: A risk-based approach just means that if we get to 90 per cent, you know the risk. It does not mean that you take the precautionary approach to make sure that we do not get to 90 per cent. Are you telling me that you do?

Peter Pollard: A risk-based approach is always about taking precautions. We try to make sure that the precautions are proportionate to the risk. That is what we aim to do.

The Convener: I am not sure that that got me any further.

The next set of questions comes from Colin Smyth.

Colin Smyth (South Scotland) (Lab): Good morning. Could you give us an update on the progress that is being made in taking forward the farmed fish health strategic framework? I am thinking, in particular, of the work of the sub-groups. I noticed that the steering group was

reformatted, and I wondered what the reason for that was. It would be good to get an update on what work the sub-groups have done to take forward the framework.

The Convener: Who would like to come in on that? Well volunteered, Charles.

Charles Allan: I think that I am best placed to comment because, other than SEPA, I am the only one who has previously been involved in the work of the farmed fish health framework. It processed for a year and, at the back end of last year, a swift in-work review was carried out. It was recognised that the work needed to be more focused, so the sub-groups have been disbanded. The plenary group will now be chaired by the chief veterinary officer for Scotland, who will commission work as she sees fit to deliver on the work of what were previously the sub-groups. Initially, it will look at three significant areas: mortality by cause; ocean acidification and climate change; and the consideration of treatments.

Colin Smyth: It sounds as though the answer is that not a great deal of progress has been made, but it will be interesting to see what the new steering group does.

On health, has any enforcement action been taken against, or sanctions imposed on, businesses for breaching fish health requirements since the committee published its report?

The Convener: That is probably for Charles Allan, although Terry A'Hearn might have some input to make.

Charles Allan: I think that the simple answer is yes. Limited action has been taken but, as a regulator, I am limited by the sanctions that are required in the legislation. In the past year, we have served two enforcement notices, both of which have related to sea lice, but that is the extent of the sanctions that have been served.

Colin Smyth: Is there any evidence that sea lice levels or fish mortality have improved since the committee's inquiry?

09:30

Charles Allan: Last week, I completed a piece of work to look at mortality levels. Mortality levels fluctuate from year to year and, indeed, from farm to farm, but if we consider mortality at an industry level, the level of mortality is remarkably consistent. The level of survival by year class is also remarkably consistent. However, within each year class and between sites there are significant differences in mortality.

The Convener: Terry A'Hearn, do you want to come in on that?

Terry A'Hearn: Again, Peter Pollard will be better placed to explain where SEPA is up to on this issue.

Peter Pollard: If we step back a bit, what we are seeing is a coming together of fish health and environment issues. Given the potential that exists for sea temperatures to rise, which has implications for plankton blooms, sea lice and other things that can affect fish, we need to work with the sector on innovation that will help it to manage that changing world and keep fish healthy. Some of that will involve choosing locations where rising sea temperatures can be coped with by, for example, taking water from lower down or moving to locations where the sea is well mixed.

There is a lot of discussion to be had around fish health and the changing world with regard to how we can manage the sector to be sustainable in the future. I think that there is a real opportunity here. As the sea changes, we face significant challenges in managing the sector in such a way that we can get sustainable fish production with minimal environmental impact. The opportunity lies in how we protect fish health in the changing sea climate and how those issues come together.

Colin Smyth: The level of sea lice and the mortality rate were of serious concern to the committee. In fact, one of our recommendations was that no expansion should be permitted at sites that report high or significantly increased levels of mortality until the issue has been addressed. There should also be a process in place that allows robust intervention by regulators when serious fish mortality events occur. From what you have said, mortality rates remain the same, but there has not really been any action to stop expansion or any enforcement action. Is that correct?

Peter Pollard: When it comes to mortalities, we do not have any powers to do that. Charles Allan might be better able to input on that question.

Charles Allan: First, I would like to come back on something that Peter Pollard said about sea lice control. The industry has introduced a number of innovations that have significantly improved sea lice control. We do not see mortality that is directly associated with sea lice; we would not consider that to be a major cause of death in the industry.

However, as we have discussed previously, we have a complex of issues that relate to the environmental impact that Peter Pollard mentioned with regard to plankton issues and algal blooms. Significant gill issues have been introduced—a complex of gill diseases are associated with the effect of an amoeba—and losses during treatment for sea lice are exacerbated by the difficulty that fish have with regard to their gill health.

The interventions that I have available to me with regard to mortality are relatively few, and they are more directed towards significant viral diseases. However, we are always cognisant of mortality that occurs on-farm. We investigate all reports, and all those reports are publicly available. All the mortality reports that we get are also available.

The Convener: Colin Smyth, do you want to come back briefly on that?

Colin Smyth: This might be more of a planning issue, but the clear recommendation was that, where there are increased levels of mortality, expansion should not be permitted. Have there been any cases where that has happened?

The Convener: It seems to me that Charles Allan is saying that he is monitoring the situation, but that he has no enforcement powers. Do you want to come back on that, Charles?

Charles Allan: The legal process that the fish health inspectorate could put in place with regard to mortality is limited. However, at the planning stage, the fish health inspectorate acts as a statutory consultee in the process. We will make observations with regard to issues such as mortality, sea lice control and containment, which will feed into the wider planning process. A report of that goes to the local authorities for consideration.

The Convener: Mark Harvey, do you want to comment on that?

Mark Harvey: I agree with Charles Allan. That would be our expectation. With sites that have particular issues that come back through the planning system, perhaps for an increase in biomass or for some other reason, we would expect to hear from the statutory consultees on those issues.

It is probably worth saying that, when it comes to the range of tools that are available to the planning authority to address those issues, we again come back to the environmental management plan or the adaptive management plan, unless the statutory consultee is, in effect, coming back with an objection and a reason for refusal. I think that I am probably fairly safe in saying that that has not yet occurred in the aquaculture regions for Scotland.

The focus for us would be on addressing the problem through adaptive management. We would expect the applicant to come forward with positive proposals on how they could improve the existing situation and to explain how they would monitor that and maintain that improvement over time.

The Convener: Richard Lyle has a brief question.

Richard Lyle (Uddingston and Bellshill) (SNP): This is a quick question for Peter Pollard. You mentioned sea temperatures. Are you or anyone else doing any research regarding increasing sea temperatures?

Peter Pollard: We are not doing any specific work on sea temperatures, but we are looking at using satellite imagery to understand what is happening in relation to algal blooms. We are doing a big study on that to understand where they occur, what they are linked to and whether we can predict where they might occur. That could help us to understand local risks to fish farms and to the wider environment.

The Convener: I know that Charles Allan wants to come back in, but I am going to bring Emma Harper in with her questions. I am sure that Charles will get a chance to come back in later on.

Emma Harper (South Scotland) (SNP): We have talked a little bit about monitoring and data collection. I suppose that that relates to algal blooms, faeces, medicines, chemicals and sea lice numbers. However, it is interesting to note that Covid has had an impact on monitoring and data collection. I am interested in what the current statutory requirements are for the collection, monitoring and reporting of data. How often should it be collected and published? How is the data presented?

The Convener: Terry A'Hearn, is that an issue on which you would be comfortable leading?

Terry A'Hearn: I will simply make a general comment. In this Covid period, we amended the requirements for several industries to try—with their limited focus, particularly in the early days with staff restrictions and so on—to get the focus on the direct environmental impact. As Peter Pollard said, that has interrupted our work a little bit, and he can provide more detail about that. The change that we made got people focusing on the environmental impact in a crisis period. Peter can comment more on where we are up to with the broader monitoring work and how that is going.

Peter Pollard: We have had to adapt quite considerably, and cut down and prioritise what we do to check compliance. We are still getting data reports from operators, which we check. Normally, we would have visited the site and checked the records locally, but we have had to do that remotely. We have also started doing prioritised audits by telephone.

Operators have found it much harder than normal to do environmental monitoring—it is difficult to do that in a Covid-safe way, so we have put in provisions to reflect that. We were still getting in monitoring information, but the amount of it is reduced.

We are just about to start our environmental monitoring programme for marine farms during the winter, which we had to pause to make sure that we could do it safely within Government guidelines.

You are right that we have had to adapt, prioritise and develop innovative ways of working, and we are exploring different ways of remote working to pick up our compliance work. I think that that remote working will see us through Covid and even beyond it. Innovation in how we help operators demonstrate that they are compliant will be very important.

Emma Harper: I have another wee supplementary. The committee made recommendations to strengthen monitoring and assessment. Aside from making changes as a result of Covid, have you made any changes based on the committee's recommendations?

The Convener: I see that Terry A'Hearn is nodding. I am not sure whether that means that you want Peter Pollard to speak.

Terry A'Hearn: I will leave that to Peter.

Peter Pollard: Under our new framework, much more monitoring of the environmental footprint of the farm is required, so that we get to really understand it. Consequently, the operators understand the threat to the environment and we understand whether they are complying with the limits of mixing areas around the farm. In that way, we will get to a situation whereby operators providing much more monitoring becomes normal practice.

We also recognise that the committee wanted more independent assessments. In 2019, we began our first ever programme of unannounced environmental surveys and inspections of marine farms. As I said, we have had to radically change that and pause that this year. The expectation is that, alongside operators providing us with more monitoring information, we will be carrying out unannounced inspections and surveys on top of the normal planned inspection process that we operate. The new framework is very much about getting more information about farm performance.

The Convener: Emma Harper, do you have any more questions?

Emma Harper: I have a final question. If there are any regulatory breaches or environmental impact assessments, how is that reported?

Peter Pollard: That is reported directly to the operator straight away, who is asked to explain it.

On public reporting, we normally run a compliance assessment scheme through which farms are reported on annually. That has been

difficult, and we will not run the scheme as normal this year.

We carry out compliance with certain conditions. That includes our reporting environmental surveys as soon as we get the results. There is an overall annual assessment, which is normal. There is a second element, and certain data comes out on Scotland's Aquaculture website in as near real time as possible on key conditions such as environmental quality.

The Convener: Charles Allan wants to come in on that point.

09:45

Charles Allan: I want to address the first question that was asked about operating during these Covid-constricted times. At the point of lockdown, we looked hard at what we were required to deliver and identified that there were certain things that we could not pause. For example, if there were suspicions of a notifiable disease, we would continue to respond onsite to those. Indeed, we have had to respond to two suspected cases. Fortunately, neither of the test results were positive.

Our approach has been similar to Peter Pollard's, in that we continue to receive our reports on sea lice and mortality. Those are followed up by phone. We have learned a lot about communication platforms in the past few months, but we are now back in the field. We have risk assessed working practices and identified those in which it is safe for us to come back onsite. We have prioritised the high-risk sites. As we deliver those, if we have spare time, we will work our way further down the priority list.

The Convener: Thank you. Does Terry A'Hearn want to come in briefly?

Terry A'Hearn: Yes. Since the committee's report, we have—this is one of the measures that we have taken—set up an advisory panel. Members include the Scottish Salmon Producers Organisation; some of the member companies; environment groups; the coastal and communities' network; the other regulators such as Marine Scotland, NatureScot and a Highland Council representative; some of the buyers in the supply chain; and a few others.

The advisory panel is important with regard to the previous set of questions about transparency, for example. In addition to the things that Peter Pollard and Charles Allan talked about, we test those with the panel. We say to it, "Look, this is how we are planning to communicate things. This is how we are planning to publicise data". We can have the groups around the table and they can have a direct interaction with the set of regulators

and the industry, for example. The people from the environment groups or the community groups can explain what information they are looking for and how best to communicate it.

We have used the advisory panel to pick up a number of the issues that the committee has raised. I thought that I would mention the panel at this point because it is helping us a lot in trying to resolve some of the issues that have been controversial and on which there are very different points of view.

The Convener: Thank you, Terry A'Hearn. Now we will go to Mike Rumbles with his questions.

Mike Rumbles (North East Scotland) (LD): One of the committee's major recommendations in our report is that the Scottish Government should

"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."

In the two years since our report, have any changes been made to the planning process that you are aware of for new or expanded fish farms?

The Convener: I ask that Mark Harvey starts off, and then we will come to others as they want to contribute.

Mark Harvey: The short answer to your question is no, there have not been any formal changes to the statutory planning process. We do not have any new guidance that places a decision quite in the way that you described from the report as to an area that is most suitable and areas that are least suitable for the siting of farms. However—I suspect that this is where Peter Pollard will want to come in at some length—we are aware that all the aquaculture authorities are undertaking that work. We feel quite positive about the work that is being done, which we think will be of some significance for the planning process.

The Convener: Peter Pollard, do you want to come in on that?

Peter Pollard: Yes. I will cover three areas where we have progressed the matter in different ways. The first area is discharges of medicines and organic waste. We run up front, at the early pre-application stage, screen models, which show communities and the operator where the waste goes and where there might be issues. That helps operators to understand whether the spot that they are proposing to develop will be straightforward or whether there will be challenges with it. It also helps communities to understand what the proposal is right up front.

I turn to the second area. Early on in the pandemic, we worked closely with NatureScot. It has done an enormous amount of work to update and improve mapping information on where

priority marine and sea-bed features are. By our understanding where the sensitive protected features are on the sea bed, we can inform developers and communities about what is there.

A third area on which we have been working closely with colleagues, including Marine Scotland, Mark Harvey from Highland Council, other local authorities and NatureScot, is to develop proposals for a new framework for assessing the interaction potential between sea lice from fish farms and wild fish. That is technical work. The framework is intended to be built around identifying which areas have the greatest potential for interaction and which have the least. That work is on-going and there is collaboration across the regulators to come up with the framework.

Those are the three main issues: waste; modelling to help understand up front where the priority marine features are through improved mapping, and explaining their sensitivity; and on-going work to identify where interaction between sea lice and wild fish potential is greatest.

Mike Rumbles: I am a little confused because you started by saying that no guidance was issued but work was being undertaken. You said that you wait for an application to arrive and then look at it. That is the whole point of the committee's report: we were saying that that is not the right way to proceed. We were making the point that there must be a major spatial planning exercise in order to develop areas where planning should be promoted and to identify those areas that would not be suitable. Work is being undertaken. What is the work, and by whom is it being done? I am getting the impression from the responses that nothing much is happening.

The Convener: Peter Pollard, do you want to start off on that? Then I will bring in Zoe Crutchfield, given that recommendation 59 of our report proposed that Marine Scotland should have the overarching responsibility for the work.

Peter Pollard: I was describing the work that is available before any application is received—at the pre-application stage—which helps us to understand environmental capacity.

I agree with Mike Rumbles. There is a lot of interest in turning that information into a spatial planning support guide. That is something that we have discussed with our advisory panel that Terry A'Hearn mentioned, and there is a big appetite for helping to provide that up-front spatial guide. We are keen to work with other regulators to develop it. We have started the foundation work, which is to understand the basic environmental capacity that would underpin any such guide.

Zoe Crutchfield: In terms of overall planning, we use the national marine plan as our key document. That is due to go through update

processes. As part of that, we can look in further detail at all the different sectors that are included in the national marine plan and how those planning policies all work together.

There have also been a number of other planning-type initiatives during the past few years, so there are a few different bits of work that are all coming together. It is strategic policy question about when such planning needs to be done, so I think that that it is probably a question more for our policy colleagues.

The Convener: Is recommendation 59 that Marine Scotland take “an overarching coordinating role” being progressed? I think that is what Mike Rumbles was alluding to. I might have that wrong, Mike.

Mike Rumbles: No, that is right.

Zoe Crutchfield: The national marine plan review is on-going. We are doing that work and we will continue to look at that over the next year. However, in terms of a bespoke sectoral plan, that is not something that is happening, no.

The Convener: Just to remind you, the committee said that

“the current consenting and regulatory framework which is spread across several regulatory bodies is confusing and is poorly coordinated.”

We then recommend that Marine Scotland should take the lead on the work. You are saying that is not happening yet.

Mark Harvey, do you want to come in on that?

Mark Harvey: Yes. I want to focus the committee's attention on the work that is under way on national planning framework 4 to deliver a new framework. At the moment, reference is certainly being made in the aquaculture section to an improved spatial planning framework, which I think theoretically could take on board the work that SEPA is pushing forward.

I have to say that I can appreciate the frustration of committee members. However, even if Marine Scotland were to take the lead, I do not think that that would remove the need for planning permission from the process. Introducing a new element to the planning regime is a strategic and long-term issue. How it would be delivered by planning authorities—that might be through regional marine plans—is an equally long-term issue. That work needs to be done. I think that NPF4 needs to take account of the spatial planning framework work that has already been completed; it also has potential for feeding into a spatial planning process.

The Convener: I go back to Mike Rumbles briefly before we move on to Angus MacDonald.

Mike Rumbles: I am slightly alarmed. It is two years on from our report in which we said that that is a major issue. I will put a layman's point to you. The process has been that a fish farm company comes along at the pre-application stage and says to the council and to the other regulators, "We'd like to build a fish farm here". At that point, everything kicks in. The committee basically said that that is the wrong way around, and that we should have a strategic approach to where fish farms should be located and where they should not be located. Mark Harvey said that, in theory, that that would be part of the process. It strikes me—correct me if I have misunderstood—that nothing much has been done on this important point.

The Convener: I am looking at the witnesses to see whether there is somebody who wants to violently disagree—well, maybe not violently—with Mike Rumbles.

Terry A'Hearn: Peter Pollard described a lot of the critical technical work that sets the foundation for that sort of broader plan that the committee has recommended. I do not think that it is fair to say that nothing is being done that advances what the committee was suggesting should happen, but it is fair to say we have not—if I have the input from others right—formally started that process of developing the type of plan that you have talked about.

Convener, I am happy to take up with Annabel Turpie, the new director of Marine Scotland, about where we are up to on the issue and how we can work together in the future, if that would help.

The Convener: Thank you—I think that it would.

Angus MacDonald (Falkirk East) (SNP): Good morning, panel. We discussed in some detail the issue of mortalities, but, for the record, when serious fish mortality events occur, are mortality levels taken into consideration when consenting to expansion? What is the current approach to addressing sites with high fish mortality?

The Convener: Peter Pollard, would you like to start off on that?

Peter Pollard: In the way that we are set up to regulate fish farms, the history of mortality is not a direct relevant consideration.

The Convener: That surprised me. Charles Allan, would you like to go next?

10:00

Charles Allan: I was expecting you to come to me first, convener. When we are considering an application for a modification, we will look at the

history of the site. If it is a new application, we will consider the history of the company.

I wanted to come back in on a point that Mark Harvey made about not being aware of objections being raised based on history. I will not identify the individual company, but we considered an application involving a number of requests for a change in equipment and biomass in a large sea loch on the west coast. Although we were content to accept the change in equipment, we indicated to the council in question that we would object formally to the change in biomass, because we felt that the company concerned did not demonstrate that it had control, particularly of sea lice, and there were some considerations of mortality.

The Convener: Angus, do you want to do a follow up on that?

Angus MacDonald: I have no follow-up, but I am certainly pleased to hear that a precedent has been set on that.

I turn to community benefits. We know that local communities have continued to raise concerns about farm developments, and some perceive that fish farms do not provide as much benefit to the local community as has been claimed. How are benefits to the local community evaluated as part of the consenting and licensing process for new developments?

The Convener: Mark Harvey can start off on that, then I will bring in other people as necessary.

Mark Harvey: It is a material planning consideration. Perhaps I am speaking from a rather Skye-centric viewpoint, but where that tends to be addressed in the applications that we have been dealing with, there is a play-off or competition between the direct or indirect creation of employment by the fish farm proposal versus the impact upon tourism. It is one industry versus another.

Our guidance to members has had to be that it is an almost impossible assessment to make. We have indicated that, at present, we do not feel that considerable weight should be placed upon it. One side of the discussion is, "It will create local jobs", and the other side is, "It could damage local employment through the loss of tourism." As I say, that is a particularly Skye-centric view, because, at the moment, tourism obviously has such an important place within the local economy. Although we try to make an assessment, I think that it is extremely difficult to do so. We know that it is probably correct to weigh up both factors, but doing that is extremely difficult.

The Convener: I am now looking at the rest of the panel. Terry A'Hearn wants to come in on that.

Terry A'Hearn: In the process, we each have statutory responsibilities as planning authorities or

regulators. SEPA has to assess applications on the environmental impact that, under law, we need to consider. We do it on those merits, but that does not mean that we cannot make a contribution to the broader debate. There are a couple of simple things to say. As Peter Pollard has described, we have tried to provide information that is more accurate, more up front, and more accessible to the proponent and people with an interest.

We can also go to a broader level. For example, one topic that our advisory panel has discussed recently is waste collection, which the committee made a recommendation on in its report. That raises questions: if there are people with proposals to collect the waste, what happens to the waste? The waste would need to be turned into an input for another industry. Where will that be—in the local community or somewhere else?

We are trying to be very careful in discharging our statutory responsibilities so that we do not overstep the mark. At the same time, we get people together and say, “Here are the possibilities, opportunities or problems that come from various types of industry development or proposals.” That way, we can play a role in making sure that people are well informed to have the public debate that they should be having and to try to find as much common ground as they can, and so that if they have disagreement, that can be aired and resolved.

Maureen Watt (Aberdeen South and North Kincardine) (SNP): Good morning. What is your current assessment of fish escapes? We have heard of a number over the past months. Have any new prevention or, indeed, enforcement mechanisms, including penalties, been developed or are in consideration? What do you believe the reasons have been for the fish escapes?

The Convener: As that is a regulatory thing, I am assuming that SEPA has the responsibility for that.

Terry A’Hearn: No, it is Marine Scotland.

The Convener: So it is nothing to do with SEPA. That is fine.

Charles Allan: The regulatory approach is laid out in the Aquaculture and Fisheries (Scotland) Act 2007. It allows me to carry out inspections and to make a judgment with regard to the measures in place for the containment of fish and prevention of escapes and, indeed, recapture methods if an escape were to occur. That is the limit of the regulatory process. Where measures are deemed to be not satisfactory, an enforcement notice may be served, requiring the carrying out of works or other measures. Where that process is exhausted and identified not to have been complied with satisfactorily, at that point a criminal offence has

been committed. Evidence may be collected and presented to a procurator for consideration for prosecution. That is the regulatory framework.

The three largest causes listed for cause of escape are—I know that it appears simplistic—holes in nets, which is the single largest cause of escape, followed by human error and issues with regard to predation. Every escape or circumstance that may give rise to an escape is required to be reported. Each of those will be followed up. Most will result in a site inspection, a report and recommendations. Depending on the findings, we may then go down the formal route of enforcement.

I do have a concern at the back of my head; one issue that was mentioned in the report, but which we have not touched on in the follow-up meeting today, is with regard to acoustic deterrents and other preventative measures with regard to predators. We will have to revisit how we consider satisfactory measures, because the number of measures that will be available to the industry will be restricted by laws governing other aspects of the marine environment. We will be looking far more closely at the industry’s ability to successfully maintain its containment capacity, largely due to maintenance of its equipment and its netting.

Maureen Watt: That is very interesting. Are you saying that standards within the industry are slipping in relation to the maintenance of netting? I thought that it had to be double netting now and that the netting had to be of a certain type in order to prevent seal entry. Also, can you please expand a bit on what you said about acoustic devices and so on?

Charles Allan: I am not suggesting that standards are slipping. The issue is that the standard will have to realign to legislative changes elsewhere regarding regulation of the fish farming industry, rather than there being a suite of measures being available, such as the ability to—*[Inaudible.]*—predators, to use ADDs at wide frequency and amplitude and the maintenance of netting and equipment. From our point of view, assessing the satisfactory measures for the containment of fish will be far more focused on the equipment installed in the future. We are already in discussion with the industry with regard to how that standard may be maintained. Indeed, we published a Scottish technical standard in 2015 which lays out requirements, and we continue to develop that, to possibly bring it to a point of use as a regulatory tool.

Maureen Watt: As a follow-up to that, have there been any prosecutions in relation to escapes and companies not meeting the standards?

Charles Allan: There have not been any prosecutions. It is not a prosecutable offence to have an escape. It is about whether the measures that you have in place are satisfactory. If they are not satisfactory, I can enforce to seek satisfaction. If that satisfaction is not met, that is the point at which the offence occurs.

Maureen Watt: Are you saying that there have not been any criminal prosecutions? You mentioned criminal prosecutions earlier. Have there not been any?

Charles Allan: There have not.

The Convener: Peter Chapman is itching to come in.

Peter Chapman: We were told that, in Norway, the various companies had to try to recapture the fish if they escaped. Is there a similar regime in Scotland? If so, is it satisfactory? Does it work? Can you realistically catch the escaped fish?

The Convener: Charles, with your fishing rod—do you want to answer that?

Charles Allan: In some circumstances, it is reasonable to require recapture. However, there is—as there often is—a conflict. The measures that you would generally put in place for recapture would be the use of netting and you are required to seek a licence for that. One of the factors is that, in attempting to recapture farmed fish, you may well capture wild fish. Certainly, when we have asked fishery boards and trusts their opinion, they often do not wish to see recapture methods deployed because of the impact that it may have on the wild fish.

10:15

Maureen Watt: That leads me nicely into my next question. Obviously, you are tasked with being responsible for the health of the farmed salmon, but in the work that you do, do you take into account how measures might affect the health of wild salmon and trout, for example?

Charles Allan: The fish health inspectorate does not specifically have regulatory responsibility for the wild fish. Where we are looking at aspects of aquaculture that may impact on the wild fish population, we would seek information from our colleagues at the freshwater lab in Pitlochry. With regard to planning applications, that is done in every case and we then pass on the evidence that they provide to us to the planning authority.

When it comes to disease we have a limited role, in that we are required to monitor or rule out the presence of listed disease in wild fish. Indeed, we carry out a number of diagnostic cases every year looking at instances of disease in wild fish. However, the regulation of wild fish with regard to

population does not fall to the fish health inspectorate.

The Convener: Can you just help me, Charles? What actions did you take during the recent escape of 50,000 fish from the Mowi farm on the west coast? It would help me to understand what actions you are taking in circumstances such as that.

Charles Allan: The escape was reported to us. We had inspectors onsite later in the week. From what we observed onsite, we have made a number of recommendations to the company with regard to its action in the future.

More widely, there is a project between Marine Scotland and Fisheries Management Scotland looking at the base genetic structure of the wild fish population. That will be monitored into the future to see if a change in that genetic structure has taken place, influenced by any introgression of genes from the farm fish escape.

The Convener: I have a final quick question on that. If you had ordered the recapture of the fish that had escaped, do you have the facilities to do that onsite? Like we have fire engines available if there is a fire, do the fish farms have the ability to catch those fish, or is that just a wishful thought?

Charles Allan: They generally have agreements with people who have better skills in the recapture or capture of fish. Many have agreements with boards, trusts or other organisations that may be able to deploy those recapture methods quickly.

The Convener: Sorry, I am just imagining 50,000 fish swimming around the west coast loch and you believe that there is somebody out there with the netting capabilities to catch them all. I am not sure that I have heard that.

Charles Allan: That is one of the contingencies that is available to farmers.

The Convener: Fine. Stewart Stevenson, over to you.

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): We have had a couple of references in an earlier question to interactions between wild and farmed stock. Peter Pollard referred to lice. We have been talking about escapes just now and we had a sideways reference to water temperature. That is the subject that I want to explore, because clearly the catching of wild fish is a significant economic activity that matters to many communities, just as farmed fish do.

Of course, it is beyond debate that the number of wild fish has been in decline for a very long time—long before there were fish farms. Indeed, when I worked for the Tay District Salmon

Fisheries Board 52 years ago, it was a matter of enormous concern there. What I want to know is who is responsible overall—this is a recurring theme in the committee's questioning. It is about making sure that we understand who gets fired if it does not work, which is the crude way of looking at it. Who is responsible for monitoring that interaction between farmed fish facilities and the wild fish population? Of course, I am not necessarily assuming that there is a meaningful interaction because on the east coast, we have seen as big declines as we have on the west coast and there are no farms on the east coast. Is there an interaction that matters and who is responsible for monitoring and reacting to it? I will direct that in the first instance to Peter Pollard, since he has ecology in his job title and this sounds to me, as a layperson, like an ecological question.

Peter Pollard: I will start with the big picture. Do we think that sea lice from farmed fish are responsible for the declines that we have seen over the decades in wild fish? No. There is a complex range of reasons, some of which are probably to do with high seas changes. The issue is whether the state of the populations at the moment can be affected by the added pressure of further sea lice as they migrate to sea. That is not to suggest that the declines over the past few decades are due to fish farming. The concern is whether the additional pressure of sea lice is now significant, as wild stocks are at such low levels.

In terms of work, after the committee's inquiries, the cabinet secretary set up a salmon interactions working group to look at the interactions from escapes and from sea lice. The group made a series of recommendations, which were reported in May. That interactions group had an independent chair, but it also had representatives of wild fisheries interests and the salmon and trout producers. In parallel with that, the regulators have set up a technical working group, which has been developing proposals on the sea lice and wild fish interaction and how to manage the added risk that sea lice from farm expansions may pose. That technical work is nearing completion.

In terms of taking it forward, that is a matter for Scottish ministers; they need to think about how to do that, how it is implemented and when, following public consultation. That is where that process is. It has followed on from the committee inquiries, setting up the salmon interactions working group and then setting up a technical working group, and that is getting close to a decision on how to take it forward. Mark Harvey can describe the existing arrangements.

Stewart Stevenson: Before we move on to another witness, that is a very welcome set of activities and I am not going to pick at that, but that answer did not give me your view on the

question of who the lead is or what part of the organisations that we have is the lead in taking responsibility for the consequences of interaction between wild fish and farmed fish facilities. Is it you? I do not mean you as an individual, I hasten to add, but is it SEPA or does it sit somewhere else? That is one of the things that the committee is struggling with—just where does it sit? When we want to come back to this subject, who do we get in front of us?

Peter Pollard: The regulatory arrangements at the moment are that the decision on a new development and its potential for interaction between sea lice and wild fish sits with local authorities, with advice from Marine Scotland and others. That is a difficult position, because at the moment there is an absence of a clear risk assessment framework for deciding on the risk. The technical working group has been trying to develop that clear evidence-based risk assessment framework so that decisions can be made.

In parallel with that, any future changes in regulatory roles and responsibilities is a matter for the Scottish ministers. I cannot say what they will choose in that space, but certainly in terms of the current arrangements, it sits with local authorities. The technical working group has been trying to make that process work better by getting a clear evidence-based risk assessment framework that the regulator could deal with going forward, whoever the regulator is.

The Convener: Stewart Stevenson, could I bring in Charles Allan and Mark Harvey to answer your specific question on who is in charge? Peter Pollard, do you want—

Stewart Stevenson: Yes, that is exactly what I want to happen, convener. Convener, just for the record, I have not yet heard a view of who is in charge. I suspect that the committee will be forced to conclude that we do not know, if we do not get an answer, and go from there.

The Convener: I agree with you, Stewart. I have not yet heard who is in charge either.

Charles Allan: It is probably reasonable to observe that no single individual person, group or body is in charge and that different aspects of the interaction will be considered by different people. I think that perhaps this is more a matter of policy than of regulation, if I may defer it to colleagues, who I believe are appearing in front of you at some point in the near future.

The Convener: Mark Harvey, do you want to add anything to that? Are you in charge?

Mark Harvey: Yes—[Inaudible.]—I think that we are. I think that that is the point that we tried to make to you a couple of years ago. It is probably

a—[Inaudible.]—situation. Ultimately, we are talking about the health of wild fish. On the setting up of a new fish farm or the granting of planning permission, we were the only regulatory body that was in a yes or no situation as to whether that development should go ahead because of its impact upon wild fish. That is where we came in with the EMPs and adaptive management. We were not particularly happy with the situation two years ago. I would have to say, having spoken to my aquaculture colleagues in the past couple of days, we are still not very happy about being in that position. Setting up the EMPs and making them work in a properly adaptive way is a tough task for authorities that are already struggling with resources.

That is why I said earlier that we were very positive about the work that Peter Pollard and his team at SEPA were carrying out. That work could be delivered through the planning system or, theoretically—it is a big decision, I guess—it could be delivered through a licensing system; a different system entirely. We are positive about the work that is being carried out, but not so positive about how it will be addressed by a regulatory mechanism. That would answer your question about who would then be the regulator with responsibility for protecting wild fish stocks. At the moment, it is us. It might be better if it was somebody else.

The Convener: I will come back to Stewart Stevenson for one further question and I will then go to Richard Lyle and try to wrap up this session.

Stewart Stevenson: I think that we probably got an answer. The point that I take from the answers is that it is not Highland Council that is the lead organisation; it is councils in general.

We have touched on my final question. Who makes an independent assessment of the overall salmon farming sector?

The Convener: Who would you like to put that to? I can put it to only one witness. You choose.

Stewart Stevenson: Let us ask SEPA.

10:30

Terry A'Hearn: As has come through in the responses to some of the questions, particularly the last one, different organisations have responsibilities for different components, so no one makes an overall independent assessment. We are trying—again, this is in line with the committee's recommendations—to bring that work together much more coherently so that we are better linked up. There is not an individual overall assessment. We do our own components in a much better linked-up way and try to provide the

information to people in a much more co-ordinated and transparent way.

The Convener: That goes back to recommendation 59 in our report, for those who have read it.

Richard Lyle: Gentlemen and lady, I am sorry but, to my mind, nothing seems to have been done since the committee published its report two years ago. With the greatest respect, nothing has been done on planning, on escapes or on sea temperatures. Basically, you all work in your silos. What has changed in the past two years?

The Convener: Gosh—what a difficult question. When that happens, I usually give everyone the chance to look away and the last person to do so gets volunteered to answer. However, you are not here. As Terry A'Hearn has put up his hand, he can answer.

Terry A'Hearn: Again, I will talk mainly about SEPA. We have had a big overhaul of the way that we regulate. As Peter Pollard described, there are new monitoring requirements. We have changed permitting and licensing requirements and we have created a dedicated enforcement team for the first time. One of its priorities is to work with the aquaculture sector on compliance.

A range of things have happened. Richard Lyle is clearly expressing that he is not satisfied that we have gone quickly or far enough but, as I have said to the committee previously, I have found the sector to be one of the most difficult to regulate, because of the nature of the industry. Most of what an environment protection agency regulates is on land and is easy to see and touch. The aquaculture sector is more complex, but we have made it one of our highest priorities and we believe that we are making progress in a number of ways.

I stand by Peter Pollard's points about the progress that we have made. We know that we need to do more. Covid has interrupted that, but we have tried to do our best to mitigate the impact that it has had and to keep pushing forward. In fact, as Peter Pollard said, in adjusting to Covid, we have found some things that we think can add value in future, and not just in the aquaculture industry.

Clearly, we are not convincing you, and we have more work to do to improve our performance and convince you that we have done so.

The Convener: Thank you. That is probably a good place to leave it. I apologise to Oliver Mundell, who did not get to ask his questions, but we will raise those with the appropriate people in a letter after the meeting.

I remind members that the cabinet secretary will join us on 2 December to help answer some of the

questions that we have raised. Specifically, we have not had answers to some of Richard Lyle's questions. I am sure that the cabinet secretary will be looking forward to that session as much as we are.

I thank Terry A'Hearn, Zoe Crutchfield, Mark Harvey, Peter Pollard and Charles Allan for their evidence. The session flowed better as we got the microphones turning on at the right moments. Thank you for all the time and answers that you have given.

I suspend the meeting for five minutes to allow a changeover of witnesses.

10:34

Meeting suspended.

10:41

On resuming—

The Convener: I welcome our second panel of witnesses, who are from the Scottish Salmon Producers Organisation and who are giving evidence remotely. We have Tavish Scott, the chief executive officer; Anne Anderson, the sustainability director; and Ben Hadfield, the managing director of Mowi Scotland.

I am worried, because we have so many questions to ask. We might just go straight to questions, unless Tavish Scott can give an opening statement of less than two minutes. If he can give me an undertaking to do that, I will let him have an opening statement.

Tavish Scott (Scottish Salmon Producers Organisation): Thank you. I will do my best to be very brief.

What I wanted to say comes down to two points. First, we have furnished the committee with a wealth of information on the changes that the sector has delivered since your report two years ago. Across fish health and welfare, the environment, transparency and data and wild fish interactions, we have gone further than you asked, and rightly so. We can go through the detail of that in response to your questions.

The second point is that Scotland must improve its productivity. That is why, rather than ask for less regulation, we look for better and more efficient regulation. If I may say so, this morning's questions from parliamentarians have rather made that point for me. I thought that your questions simply served to illustrate what needs to happen to enhance what the committee wants and what the sector wants.

I will leave it at that. I am happy to deal with your questions.

The Convener: Thank you. The first questions are from Oliver Mundell.

Oliver Mundell (Dumfriesshire) (Con): From listening to the first evidence session, I think that it is fair to say that it does not feel from this side of the table that an awful lot of progress has been made since the report was published. We have heard that there are some regulatory changes. How have the SSPO and the wider industry responded to those? Where is the tangible progress?

The Convener: I can see all the witnesses on the screen, so it would be helpful if whoever would like to come in first could just raise their hand, and then I will call you. As no one did that to start with, Tavish Scott can start off and then I will go to Anne Anderson.

Tavish Scott: Mr Mundell asks an important question. It will be important for Anne Anderson to give the detail on exactly what has happened. I will simply rest on the point that I made in my opening remarks, which is that we are conscious of the direction of travel that the committee set out a couple of years ago. In the written evidence that we gave you prior to the meeting, we set out what the sector has done.

Anne Anderson can give you much greater breadth and granularity on that.

10:45

Anne Anderson (Scottish Salmon Producers Organisation): We have been working closely with the regulatory delivery partners for the Scottish Government. One of the key things is ensuring that the right level of evidence and information is available. The committee heard earlier about the additional monitoring environment and platform on which SEPA has based its regulatory information. Key to that is the ability to evidence our impacts and investing in those areas, together with investing significantly in our freshwater areas of farming so that, when we get to sea, we are as effective as we can be.

The earlier question about feed is an important one. Our work on feed and efficiencies is a good example of the multiple benefits that the industry has provided. Diet is important for humans and, of course, it is important for fish, too. We have invested in high efficiency feeds and getting feed conversion ratios down so that less than 1.2kg of feed—in fact, we are getting ever closer to 1kg—produces 1kg of salmon. That means that discharges, including faecal discharge, from marine pens is reducing as we become more efficient in feed conversion. Of course, the diets are bespoke. A unique feature of Scottish quality farmed salmon is how well we feed our fish so that they are given as much strength as possible in

that move to sea. Managing the regulation in the environment is all about balancing in relation to fish health.

We heard earlier about the multiple regulatory platforms and elements of silo thinking. One key thing for us is to ensure that we have access to sufficient levels of medicines to manage the health of the fish, as well as other treatment mechanisms. Substantial investments have been made by companies across the sector in wellboat technology.

The Convener: I am sorry, but I am going to rein you back a wee bit, Anne. You do not have to answer all the questions that were raised in the first session in your first answer, because you will upset Ben Hadfield, who is waiting patiently to come in. I am sure that many of the points that you raised will come up later.

Ben, now that Anne has taken up a lot of your time, please be succinct.

Ben Hadfield (Mowi Scotland): I am pleased to say that the industry has responded strongly, particularly in the area that the committee raised previously of wild fish and farmed fish interactions and the—*[Inaudible.]* We have increased transparency markedly and now publish information on sea lice mortality and disease status. Looking at that information is equivalent to going into the company and looking at its books. We have moved forward with a conservation fund that is aimed at improving the habitat of wild fish and we are working in partnership with the wild fish sector. We have worked hard to quantify the impacts of sea lice and escapes and we have made significant progress on escapes.

Oliver Mundell: Has there been a material change in the two years? I did not hear that from the first panel. I am hearing about lots of things that are perhaps being done a bit better or pushing around the edges, but in the timescale for delivering on the pledges in your charter, what has been delivered? When will it be delivered and which of the activities that are outlined are already under way?

Ben Hadfield: It is—*[Inaudible.]*

The Convener: Ben, I do not know whether you can hear me, but we are struggling to hear you. I do not know whether you can conjure up another form of connection, but I am struggling to hear you. Try again.

Ben Hadfield: I was trying to say that we move a lot quicker than the regulator—*[Inaudible.]* The industry has not sat on its hands. We have moved forward quickly with the recommendations, and we are happy to evidence that in detail today or in a written statement.

The Convener: Ben, I am sorry, but we are struggling to hear you. I want to hear your contribution. I do not suppose that you have headphones or something that you might be able to try. I will go to Tavish Scott, in the hope that I can come back to you.

Tavish Scott: Mr Mundell was driving at two aspects. The first is covered in the written evidence that we provided to the committee, which responds in detail to the recommendations that the committee made in 2018. Anne Anderson can augment this, but we set out in detail not only how we have met the broad spread of your recommendations but specifically how our member companies have invested in science and in technical solutions to respond to the very points that the committee asked the sector to respond to in that period. I strongly suggest that we have made a big shift in the areas where the committee asked us to do so. We can come on to the issue of regulation, but you obviously had questions on that for the regulators.

Mr Mundell's second point was about our sustainability charter, which we set out last week. I thank him for raising that issue. The charter sets out short-term objectives and key principles, as well as longer-term objectives for the sector as a whole and for our member companies. The process was driven by a widespread consultation, not just with member companies but with broader stakeholders. We are seeking to meet exactly the same objectives as the Scottish Government, the United Nations and others are on net zero emissions of greenhouse gases by 2045. We are aligning ourselves with the efforts not just in Scotland but worldwide to play our part in tackling climate change.

Anne Anderson is very much the brains behind all that. If it would help Mr Mundell, she could set out more of the thinking behind the sustainability charter.

The Convener: Before she does so, I will bring Oliver Mundell back in and then give Anne Anderson a brief chance to answer.

Oliver Mundell: Tavish Scott talked about short-term and long-term objectives. What are the specific timescales for delivering on the pledges?

The Convener: Anne Anderson, do you want to come in on that?

Anne Anderson: Our charter sets out the need to clearly establish our sustainability baseline. That work is under way and we will report on it next year. Part of that exercise will be to establish short, medium and long-term targets, which will be measurable, accountable and realistic targets. We will report annually on our successes and on the elements that we have not delivered, and we will explain clearly why that is the case.

It is a very broad sustainability charter and it is highly ambitious. Like many other sectors, we do not have all the answers to be able to deliver the ultimate ambition of net zero greenhouse gas emissions, but the charter clearly states our sector's ambition to be part of that journey and to work with others to deliver it. We believe that it will stimulate strong growth in our supply chain across many small and medium-sized businesses in Scotland.

Oliver Mundell: Can Anne Anderson give one specific issue on which we can expect to see something in the charter delivered in the next 12 months? Is there one thing that we can expect to see in a year's time?

Anne Anderson: I hope to be able to provide details of some very early trials that we are doing. You heard from Terry A'Hearn about organic waste capture technology. We are currently trialling some locally generated innovation in Scotland for our specific situations. We are actively engaged on some of the measures that we have set out, and for others we are building on existing strengths. I hope to be able to report on that example in our annual report next year and to give an indication of where we intend to go next in that particular area.

The Convener: We will move on to the next set of questions, which are from John Finnie.

John Finnie: I want to continue with the point that Mr Mundell touched on. Thank you for the information that you have provided. Mr Scott talked about "objectives" and Ms Anderson talked about "targets". The sustainability charter outlines actions that the SSPO and its members say that they will take. I note and welcome the phrase

"We will be good neighbours in every way",

but what are the concrete outcomes—you touched on one, Ms Anderson—that you are committed to achieving? Importantly, are the actions in the charter sufficient to address the challenges that the industry has been told that it must tackle?

Anne Anderson: When we established our charter, we heard very clearly from all stakeholders. The Coastal Communities Network provided some written information and we heard from environmental non-governmental organisations and representatives of public bodies across the country and within our memberships and supply chains, so the community was represented, albeit by different terminologies, across the piece. A key aspect that we looked at was building on strengths and identifying the big as well as the small actions and all things in between. We were looking to establish, on every point, where we can provide multiple benefits—we have submitted to you our report on what we have done in the last two years.

You will note that in our fish welfare section we refer to the need to bring in new pen infrastructure. Pen infrastructure is designed and built for a purpose, and innovation in pen design means that moving forward with new infrastructure can bring multiple benefits. We are working very closely with our regulators to establish ways of expediting what for us are the fences on our farms in a way that is swift, enables investment and allows elements of control, prevention and retreat, in terms of larger pens with predators circling around them. It also allows us to put in barriers and to bring in well boats on either side to expedite and manage any health conditions on farms. That is an example that provides both environmental and welfare benefits.

Our sustainability charter is riddled with elements like that, where we are looking at the information that we have about the locations that we are in. Wildlife information is a very good example. My farming colleagues are fascinated by and very careful about the farming environment that they work in and we have discovered that their observational records are of immense value to stakeholders, not just charitable organisations interested in wildlife, but local communities, local businesses and wildlife tourism. Sharing information and being part of the wider community that we live and operate in is invested right across our document.

John Finnie: I note your answer. I think that you have a fairly significant public relations challenge and one of the aspects of that is the industry growth projections. I will direct my questions to Mr Scott. Are those projections compatible with the capacity of the environment, the ability to deliver high standards of animal welfare at scale and, importantly, the ability to co-exist with other marine users and local communities and not adversely impact them? Looking ahead, could you comment on growth projections?

11:00

Tavish Scott: Thank you, Mr Finnie. It is an important area. The main point for me—and I say this with all my old Shetland hats on—is that we work in the marine environment in collaboration with all the other marine users. For example, salmon farming in Shetland is successful because it works with all the others in the coastal waters, and that has to happen right around the coastline of Scotland. In addition to that, we are the most heavily regulated industry. I think that it is very important to recognise two points. We wish to sustainably develop and grow the value of the sector—we are, after all, Scotland's number one food export sector, something that Scotland should be very proud of and I hope that the

Parliament is very proud of as well—but we need to do that very responsibly. We are acutely aware of the pressures that we face.

On your point about public relations, it is very important to recognise that 12,000 people work directly in the sector and indirectly for 3,600 companies that service the sector. That is a lot of jobs in 73 separate constituencies right across Scotland and believe me, as someone who used to represent some of those people, I think that they care very much about how well the sector does and they want us to be responsible and sustainable in our actions. That is why Anne Anderson has been speaking to the sustainability charter. We will act in that way in absolute consistency with the charter that we have just set out.

John Finnie: Thank you very much indeed for that; I absolutely recognise that. Perhaps the unfortunate thing about the debate is that people ask, “Are you for or against?” which is a loaded question to start with. I absolutely take on board what you are saying.

I will ask particularly about growth and the capacity of the environment. We heard from Highland Council a view that the island of Skye is at capacity—there are other areas—and about the overlap between local authorities and the regimes that exist there. Do you have any doubts that there is capacity to deal with such growth, which is significantly trumpeted by the Scottish Government, of course?

Tavish Scott: It is probably best to give Mr Finnie a proper answer and have Anne Anderson and Ben Hadfield talk to that question. There is a lot of sensible science behind the industry, in addition to the regulation. In other words, we cannot do anything if we are not allowed and consented to do so as a sector, and rightly so. We want appropriate regulation to develop our sector sustainably. I will ask Anne Anderson and Ben Hadfield to speak to the important science behind Mr Finnie’s very clear question.

The Convener: I will give Ben Hadfield the first chance, so that Anne Anderson does not cut down his speaking time.

Ben Hadfield: The question was touched upon two years ago. To have a successful farming operation you need to have a great environment to grow fish in. Salmon is an indicator species; it needs really high water quality. Just putting a number for growth is not the right way to do it. Talking about growth with improved animal welfare, improved environmental performance and improved sustainability is where it should be. The industry will grow globally. I hope that it will grow in Scotland, but it is difficult to grow in Scotland. The regulation is strong, although it is a bit

fragmented. It is incumbent on us as key players in the industry to make sure that we grow in a good way, from a productivity, profitability and environmental stewardship approach. I think that we have made progress on that in the last two years.

John Finnie: Can you briefly explain what you meant by fragmented regulation, Mr Hadfield?

Ben Hadfield: Regulation in Scotland is some of the strongest that we see, but it is quite siloed, as Mr Lyle said. There are elements of it that should be addressed better and in a more co-ordinated way. One of the things that we can openly agree on is that the interaction with wild fisheries, with wild salmonids, needs to be better. The industry has not sat on its hands and just accepted that. We have really stepped up our work with the wild fishery sector. We have put in place complete transparency on lice levels, disease and mortality events on farms. Some of it is still negative, but at least it is openly discussed. We have put in place a fund for conservation projects, because when you want groups to work together you have to get them to work together around some resources. We have approached the interactions working group with some significant voluntary controls that we will recommend to regulators that will improve the relationship. I feel that we have delivered in the last two years, perhaps not 100 per cent, but we have stepped up to deliver in the presence of the siloed regulatory landscape.

Anne Anderson: On the point about environmental capacity, our environmental performance is improving year on year, Mr Finnie. We are in the process of receiving all our results from SEPA for 2019 and I hope to be in a position very shortly to publish the collated findings.

We have also done work to demonstrate the very precautionary nature of some of the areas around medicine residue discharge and we are working closely with SEPA to establish new ways of modelling and providing information associated with that. It is exceptionally key to any sector that manages live species to have access to sufficient quantities of medicine, not just for our farm fish but also to support maintaining low sea lice numbers so that they do not impact on the wild salmon that pass our farms. I do not have anything else to add at this point.

The Convener: John Finnie, are you satisfied with the answers?

John Finnie: I am concluded, thank you, convener.

The Convener: That is a nice way of putting it. Thank you. Richard Lyle, I think that you have the next question.

Richard Lyle: I agree with Tavish Scott and Ben Hadfield that we have to improve and increase our farmed salmon product with improved regulation, direction and help from agencies.

In our inquiry report, we voiced comments about the wild salmon issue, which is an on-going situation. The sustainability charter commits to developing

“a wild salmon monitoring programme to provide evidence-based conservation measures”

of wild salmon. Is acting to prevent impacts on wild salmon, based on a future evidence base, also part of your commitment? What form do you anticipate that that prevention will take? That is a question to Anne Anderson.

Anne Anderson: Thank you, Mr Lyle. Yes, absolutely, we are very committed to working with other users of the shared water space, with Government and other marine sectors, to ensure that the monitoring plan for wild salmon is not just west coast focused, but is right across Scotland. The Scottish Government recently established the wild salmon steering group as part of its efforts on the conservation of our iconic species. We have, as Mr Hadfield referenced, put in considerable effort in dialogue as part of the salmon interactions working group. It all aims to ensure that there is balance and suitable, credible evidence. We have recently committed—and are delighted to do so—to join the Atlantic Salmon Trust’s west coast migration project as a full partner. There is a particular gap in the information on where wild salmon travel and, of course, we will benefit from that information informing where we farm. It is an utter commitment by us as responsible farmers to be part of ensuring that we have the right information to inform decisions on wild salmon.

Richard Lyle: I am sorry, convener, I have lost sound.

The Convener: We can see and hear you.

We will move on and once we re-establish connection with Richard Lyle we may try to come back to him. The next question is from Peter Chapman.

Peter Chapman: SSPO members, including Mowi Scotland, continue to have high-profile escape events. The most recent was in August this year, when 50,000 salmon escaped. What is the current view of those events, what are their primary causes, and how is the industry trying to ensure that such escapes do not happen in the future?

Ben Hadfield: We lost 48,000 fish from the Mowi Scotland farm in Kilbrannan Sound, in Carradale. It was very serious and we take it very seriously. We were disappointed by that. The level of escapes over the past 20 years has dropped

markedly in the industry and that is against the background of the industry increasing production volumes. In the last five years, 2016 to 2020, there was a 62 per cent reduction on the previous five years, but I will not sit here and say that we are satisfied with our performance.

We have increasingly expanded in offshore, high-energy locations and we have done that because in those places the hazard that sea lice potentially pose to wild fish is a lot less and the level of waste assimilation is much higher. They are generally more sustainable locations in which to grow the sector, but they are in a very challenging marine environment. We have had a good track record over a series of years, putting in a higher standard of equipment. We have fantastic, really skilled people operating in those exposed environments. We have done a lot of great things to create jobs and infrastructure on islands such as Muck, Rum and Colonsay.

Nonetheless, I am disappointed by the escape event. I was personally involved in that for about five days. We communicated very transparently about what had happened and we took steps to secure all the equipment in advance of this winter. There was an unprecedented storm event in combination with high tides and we have worked with FMS to put in place one of the largest genetic introgression studies that we have seen in Scotland to look at any potential effects of the escape.

Finally, as leader of the company, I have apologised for the escape and we will work tirelessly to make sure that the trend with escapes goes down, but I do not try to say that it is not negative.

Peter Chapman: Thanks for that. Basically, you are saying that it is a weather thing; many of the cages are further offshore where the weather is more severe and that has an effect on the cage itself. What effect do seals have? We have heard that seals can make holes in the nets.

We asked the previous panel and I will also ask you whether you made any attempt to try to recapture any of the fish. Is it feasible to try to do that? I believe that in Norway they have to try to recapture them. What is the situation in Scotland and what was the situation in the particular event where you lost those fish?

Ben Hadfield: Escapes occur with reducing frequency all over, because of the improvement in equipment and containment, but when escapes occur in Norway and Chile, there is a much quicker focus on recapture. We wanted and proposed to recapture the fish. We have equipment on standby. I think that it was the convener who asked earlier whether we have fire trucks or the equivalent on standby. The answer is

yes, we do. We have a number of containers where we store equipment for recapture. We have people who are skilled at it and we work with a number of boards to make sure that we have that capacity. In the Carradale escape, we brought a purse seiner from the east coast and had it on standby in the harbour at Campbeltown, just in case the escape got any worse. We moved quickly to do that.

The fish were immature and had been less than one year at sea. Although 48,000 escaped, the rate of predation of those fish is immense and so far we have seen about 400 fish turn up in the rivers. They are immature, so they will have to wait one year, without food, before they spawn this time next year. We expect the impact from the escape to be relatively low, although the number is high. It is not acceptable, however, so the industry is focused on achieving a year with zero escapes and progress has been made towards that.

11:15

You asked about seals. Within a very short space of time, the ability to control seals using acoustic deterrents or to dispatch a persistent seal that is damaging the pens and impacting fish welfare has been taken away from the industry. Therefore, the risk of escapes due to seal predation is higher. One of the ways in which the Government and the regulators could help is by making it easier for farmed salmon operators to move more quickly to improve the equipment and use heavier specification pens and nets. Given that we have been severely disadvantaged against our global competitors, we really need that help.

The Convener: Peter Chapman, do you want to come back on that?

Peter Chapman: No, unless you have anything to follow up on.

The Convener: No. I was wanting to drift back to Richard Lyle, who disappeared into the ether. Richard, I think that you had a follow-up—would you like to ask it briefly?

Richard Lyle: Sorry, convener; I lost sound. My apologies to the committee and to the panel. I said earlier that agencies are working in their own silos. What needs to be done to improve the position for your organisations?

The Convener: I will bring in Anne Anderson to answer that briefly, on the basis that she probably knows the agencies well.

Anne Anderson: One of the key things is streamlining. Marine activity has four permissions associated with it, which are from four different bodies, two of which are within Marine Scotland. Each of those processes has a separate consultation and the bodies are all consultees of

each other. There are also three public application and public consultation processes that feature, and not a single one of them naturally fits with the others and runs at the same time; there is no order of running. We have mentioned before the complex nature of our activity, and it is not really measured or visible in its totality at one time, because of the way in which the system is set up. That concern about the gap that was identified around wild fish, for example, and the lead authority for wild fish still remains.

The process should be streamlined. It is critical for our sector that we get to the point where there is a single determination, with all the facts on the table at one time, and the choices on fish health are balanced against the choices on the environment and the welfare issues that exist between both. Those are the choices that we have in front of us. How we address farming is with that information right front and central in order to inform the decisions that we take. It is appropriate that something similar to that is how we manage the farming process and it would align with how marine sectors are regulated in the marine space, too.

The Convener: I hope that that answers your question, Richard.

Peter Chapman had a second part to his question.

Peter Chapman: The sustainability charter from the SSPO commits to diverting, reducing and reusing waste and establishing a circular economy for organic waste. What is the timescale for mainstreaming those activities? Do you anticipate that, in the future, farms will no longer deposit waste into the marine environment? Is that something that we can achieve in the foreseeable future?

Ben Hadfield: There is a need for a more circular economy in salmon farming in Scotland, but we should not forget that salmon farming is one of the lowest emitters of CO₂ of any mainstream protein choice that you can make to eat. We need people to eat more fish. The case is clear that, for health and for the environment, it is a good choice in order to reduce the CO₂ profile. Work needs to be done on logistics and packaging, but for a circular economy improvement needs to be made to the way we dispose of any mortality that occurs. We are increasingly farming cleaner fish now, such that it is likely that we will not have to take cleaner fish from the wild in a few years' time, or at least we will take a very reduced number. Once the cleaner fish have cohabited with the salmon and controlled sea lice, we need to have an acceptable method of reusing the cleaner fish for fishmeal purposes and to be fed to other species. The industry is

focused on that and it is an important part of the charter that has been submitted.

The Convener: I think that Peter Chapman is happy with that, so I will move to the next questions, which are from Angus MacDonald.

Angus MacDonald: Good morning to the panel. The SSPO update that the committee received recently refers to operations being decommissioned or ceased at some farm locations that

“did not meet producers’ environmental impact aspirations.”

What were these decisions based on? What work is under way to evaluate where existing sites are appropriate and where new development would be appropriate based on the environmental capacity?

The Convener: I will go to Ben Hadfield on that, because he might want to talk about Loch Ewe or somewhere else.

Ben Hadfield: I am happy to answer that question. The industry as a whole is increasing its sustainability by choosing more open locations or locations that assimilate the waste on the sea bed particularly to a greater extent. There are some locations that, in working with us, the wild fish sector identified as being sensitive. Some of the farms in those locations were put there several decades ago. In the case of Loch Ewe, which you asked about specifically, convener, we had a farm there and the view was that it was in a fishery that may be impacted. We had been there for many years but, in the end, we found a solution whereby we relocated that biomass to another location supported by the Wester Ross Area Salmon Fishery Board and the Skye & Wester Ross Fisheries Trust. We have decommissioned the site. We have kept the people in employment and they have moved to other locations and we have managed to expand our production as a result of that move. That is a step towards improved sustainability and a win-win for everyone—us and the wild fishery sector.

Angus MacDonald: That is helpful. I was involved in the Aquaculture and Fisheries (Scotland) Bill when it was going through in 2012. There was talk then of significant movement in taking the cages further out to sea and not so near the shore. What progress has been made on that?

Ben Hadfield: A lot of companies, my own included, have a policy of not really expanding inshore unless they are able to do so with new technology or a new approach. We have identified a number of locations in open sea areas, in discussion with the farmers and with other stakeholders. A number of companies have been able to expand in those locations and create rural employment in areas of depopulation. That has taken place on Orkney and Shetland. In our own

area, and I am involved in it, we have expanded on Muck, Rum and Colonsay and built houses and infrastructure. Generally, we have been able to produce more fish, and very high-quality fish, in those open, exposed environments. We have identified that the escape risk is a little higher due to storm events and we are working quickly to fix that.

Angus MacDonald: That is also helpful. I have a final question to Ben Hadfield. The committee was told in 2018 that all of Mowi’s Scottish sites would be Aquaculture Stewardship Council accredited by 2020. Has that been achieved? What is the level of ASC accreditation in the industry overall?

Ben Hadfield: There are multiple standards that companies choose to work to in order to supply their consumer base and customers and demonstrate the highest production standards. Mowi has chosen to go down the ASC route. It has a higher obligation on stakeholder consultation and sea lice control, working with the wild fisheries sector. The first step for us was to get all our freshwater sites ASC certified, which we did last year, because those produced the smolts that were the start point and, indeed, that was the blocker to getting the marine sites certified.

All of our five freshwater locations are ASC certified. We are now rapidly certifying the marine sites and we have employed extra people to do that. Two years on, we are harvesting ASC-accredited salmon now and many other companies, which Anne Anderson will be able to describe, have similar standards to justify the highest welfare and environmental standards of production to their own consumer base.

Anne Anderson: ASC was very much ahead of other standards for some time. From a number of years back, around the wider environmental areas there has been substantial changes in a lot of the accreditation schemes. As Ben Hadfield rightly stated, companies are aligned to a number of different accreditation schemes, but the important key thing for us is that they address the key issues raised by the committee and we will continue to do so.

Stewart Stevenson: Tavish Scott is being quite lonely there, so I am going to address this question to him. We heard from Ben Hadfield something about the use of cleaner fish. I want to ask Tavish Scott—and of course he can invite someone else to answer if need be—when the industry will stop using wild cleaner fish, because it is pretty clear that in Scottish waters there is not a sustainable population of cleaner fish to be harvested and brought in to eat the lice off farmed fish. If we are not in a position today to say when that will be eliminated, the alternative question is,

when will we know when a date for eliminating it will be set?

Tavish Scott: I suppose that the best answer to give you, simply put, is that we will write to you with the details on that. As Ben Hadfield said in response to an earlier question, we are going through a process on that and I do not think we could offer a precise view on the timescales today, but you raise a very important point. I think that it is also relevant to recognise how important cleaner fish have been in the process of tackling sea lice and what an advance that has been for the sector and, therefore, for the environment. Let me do no better than simply say that we will come back to the committee in writing with the best information we have on that, which depends on our research and research in conjunction with other parties as well.

The Convener: I think that, when we visited the various fish farms, cleaner fish could be used legally for two cycles. I might have that wrong, but they could be used for two cycles and then they had to be killed and they could not be used again. Is that right? There was a thing in the industry to say that they could do more than that and that we were getting rid of a good resource that we ought not to be getting rid of. Ben Hadfield, have I got that wrong, or is that right?

11:30

Ben Hadfield: No, I think that that is about right. To go back to Mr Stevenson's point, I think that a limited capture of cleaner fish from the wild is okay. Prior to them being used on salmon farms, they were used as bait and there was a high level of discard and mortality with that. A small amount is probably okay, but the demand, as Mr Stevenson rightly pointed out, is much higher than perhaps is sustainable in certain areas. The industry has responded enormously on this through innovation. Many of the companies have been involved in projects and we are now on the cusp of being able to farm cleaner fish for use in Scotland, Wales and other locations out of England, where we have disease-free cleaner fish in good number with higher welfare making a big impact on sea lice.

As we have mentioned, the next stage is to make sure that there is a circular use for those fish, so that they are not wasted once the salmon cycle ends. Some of the big Ballan wrasse are quite long lived and you can reuse them for multiple cycles. That is a good thing from a fish husbandry point of view, but there is a risk that they can become a vector to continue disease from one cycle to the next cycle. Fish farmers use the following period to control disease in a good way.

I hope that that answers the question, but the thing that we can be proud of in the industry is how quickly we have managed to innovate and close the farming cycle around cleaner fish and increase the number such that we do not need to continue to take them from the wild in the main.

Stewart Stevenson: I will make the observation, before I ask my next question, that a variety of cleaner fish are used, and I think that it is broadly accepted that we do not understand how sustainable some of those populations are.

Let me pass on to the subject of acoustic devices, which Ben Hadfield referred to earlier. The papers that the SSPO has put to the committee talk about a risk assessment on that. My questions are quite straightforward. Who is doing that and is it being independently validated? I make the observation that this is a very important issue because I think that it is now quite widely understood that a number of species that we are not targeting with submarine acoustic devices can be affected by their use at great distances. Who is doing the risk assessment and how is it being independently validated? Given that Ben Hadfield raised the subject, I suspect he might want to pick that one up.

Ben Hadfield: I will answer briefly and maybe Anne Anderson can take it forward for the whole industry.

The permission to use acoustic deterrents has been removed by Marine Scotland and they are being taken away from farms. At the same time, the Marine Mammal Protection Act in the United States has been brought forward surprisingly early. It does not come into place until 2022 but, in a short space of time, those two control methods to protect stock have been taken away. Do not forget, fish farmers are in a difficult position here. We have a legal and moral obligation to protect our fish from seal predation, which can be quite high at certain times of the year, and the last thing that anyone wants to do is dispatch a seal or emit sound into the environment in an uncontrolled way.

I think that the industry has been quite responsible about this. It has complied in full. If acoustic deterrents are going to be used, they need to be subject to important processes that measure and consider the effect on non-target species. However, to reiterate what I said before, we need help from the regulators—they need to show a bit more flexibility with regard to changing equipment to exclude seals. It is a serious issue and you saw from the previous evidence that, although we have good regulation in Scotland, it is not the quickest to move forward. We will have to go through a winter when seal predation on our stock, impacting the welfare of the fish under our care, could be quite high.

Anne Anderson: Our industry has a legal obligation to undertake the risk assessments that have been mentioned. First and foremost, each of our member companies is undertaking a risk assessment of the current stock of ADDs, which are varied. The supply chain businesses have also presented recent studies in the use of ADDs within the marine environment to Marine Scotland, which is the answer to the question on who does the independent assessment and validation. This is a process that we are engaged in right now and are doing those submissions and assessments.

With regard to the recent findings, the science is under debate. Of course, these are new reports that have been commissioned in 2020 by manufacturers of acoustic deterrent devices and devices that are used across not just the fish farming sector but other fisheries and other sectors in the marine environment.

It most definitely is an on-going process, and the law associated with European protected species is subject to a process of continual review. You would envisage that that will occur and, if it is determined that any of those devices require a licence, application for that then follows, and that is an annual process. There are software upgrades and changes in decibel frequencies. There are all sorts of new innovations coming forward on deterrents for use, but a lot of them are in the trial period and, of course, that is where there will be continuing dialogue on this subject.

Colin Smyth: Good morning. I return to the issue of fish health. What is your current role in delivering the farmed fish health framework? I know that we have touched on a number of the things that you are doing at the moment, but I would like to know what you are doing specifically on that framework, because there have been changes in the structure of various subgroups.

Anne Anderson: As you said, the steering group has recently reformed, with Sheila Voas, the chief veterinary officer, taking the position of chair. She will be directing and creating the projects and work associated with those three themes. SSPO represents the sector of the group, and we pull in experts according to each of the topic areas.

We have been providing quite a bit of information in preparation for the next phase, looking at assessing causes of mortality, as Charles Allan said earlier. The on-going work associated with that has been under way, in close collaboration with the fish health inspectorate, during 2020. When the meetings have not been held, there has been continuing dialogue about establishing a really solid baseline of information.

Similar levels of work are done on climate change and the environmental impacts that the farms are experiencing and on trialling remote

sensing technology to give indications of early warning. Quite a lot of substantial practical work and desk-based studies are going on during 2020, where other aspects of Government direction have been. I understand that the steering group will meet again shortly, and that the structure directed by Sheila Voas will then formally commence.

Ben Hadfield: I was involved in the steering group on behalf of the industry. Progress was acceptable but, if you are impatient like I am, and you want better welfare for your fish, you want it to be faster. We managed to develop the transparency on sea lice, with regard to reporting of mortality and disease status. The levels were brought down over time to have higher control on sea lice. There was work done on cleaner fish welfare. I think that the choice to put Sheila Voas in charge is a very good one—an inspired choice—and the group will be all the better for it.

Colin Smyth: You touched on the issue of sea lice, and the SSPO's update to the committee says that the industry's annual average sea lice count is 0.5 adult female lice. What is the variation between fish farms? Do we still have poor performers, and what level are those poor performers at? Is there seasonal variation? I think that Ben Hadfield mentioned that the figures were getting better, so are we seeing a proper performance improvement when it comes to overall levels of sea lice? What is the information on that?

The Convener: I will ask Ben Hadfield to talk about overall performance and seasonal variation, and Anne Anderson or Tavish Scott can talk about the poor performers, because I do not think it should be up to Ben Hadfield to point the finger there.

Ben Hadfield: The general trend, especially since 2018, when we last gave evidence, shows that sea lice control has improved. We have seen an increase in the availability of wellboats providing freshwater treatment that can be used to treat sea lice, an increase in the number of cleaner fishes deployed and used, improvements in mechanical de-icing technology and welfare improvements for salmon and cleaner fish.

The overall level is down. The situation has improved—it is visible and transparent now. You can find information on the website of any company or, more likely, the SSPO website.

Anne Anderson: There are outliers. The average across the sector, as you rightly stated, is 0.5—that is the annual average. As Mr Allan said earlier, there has been some use of the enforcement policy, with warning letters and advisory letters issued when the numbers have triggered. That is the purpose of the trigger process and notification. It involves the collective

effort of the farmers, the vets and the health managers bringing in the right treatment methods to get that number back down into the target area, which for us is 0.5 to 1.

There is most definitely a seasonal element to this and, in fact, our particular focus is the spring smolts season—that is, the run of the wild salmon, particularly focused in the west coast areas. The sector shares information between member companies working across farm management areas and we are focused on ensuring that we are managing that space throughout the year, with particular attention to getting the number below 0.5. We have noted that the annual average recently has been 0.4. We have every intention of continuing to drive that number down at that critical time, which is what we understand from our wild fishery colleagues is needed.

Tavish Scott: I have two brief points to make in response to Mr Smyth's question. Is there fluctuation in the average figure? Yes, of course there is—by definition, it is an average figure. However, as Anne Anderson has just illustrated, that area management regime encourages and helps all farmers to come together to drive the figures down. That is in the interests of the environment and the sector.

The second point that I think that you have alluded to is that we have been extremely comfortable with putting in place the transparency that the committee was looking for a couple of years ago. We have absolutely driven into that space because it helps—there is no two ways about it. You well know in politics how transparency on figures—whatever the data might be—can bring a ray of sunshine into a tricky area. This is a tough area and it needs to be properly addressed. The industry is doing that, as illustrated by the points that Ben Hadfield and Anne Anderson have made. I think that the committee should take some credit for driving that and looking for improvement in this area, which we have achieved.

11:45

Ben Hadfield: I did not really answer the question about seasonality properly. Levels are their lowest during the spring, as Anne Anderson said, and this time of year is the most challenging part of the year in terms of sea lice control.

Colin Smyth: I think that Anne Anderson touched on the direction of travel. Your current level is about 0.4. What is your target? Do you have a target for progress over the next, say, 12 months?

Anne Anderson: We do not have a specified target; it is simply downwards, downwards and downwards. That is evidenced in the trends over

recent seasons. One of the key measures is ensuring that the information is available. Our dataset is fully available, as Tavish Scott pointed to, and we made recommendations jointly with the wild fisheries sector on supporting datasets on wild salmon itself. Sharing that information is key to having an understanding of what is there and, of course, this is an area that the committee highlighted was not clear.

We are supportive of any efforts that can be made to address that and to fill in some of the gaps associated with understanding sea lice loads on wild salmon. That is particularly key because it supports our efforts in addressing and managing the numbers lower and ever lower. No specific target as such has been set as yet.

Ben Hadfield: Sea lice—[Inaudible.]—have been around for about 6 million years, like salmon have, so it is not advisable to go for complete eradication. We need to get to levels that present little or no risk to migrating wild smolts. That is why we, as an industry, have stepped forward and funded the west coast smolt tracking study, so that we can manage our levels to the lowest we can—but not go for zero because that runs the risk of our overusing the control tools that we have—and then identify where the wild smolts are moving through the ocean as they move out to the feeding grounds, so that we can manage this together. Despite the fact that we have not had a regulator championing this, I feel that the industry and the wild fish sector have worked very well on it over the past two years.

The Convener: The next questions are from me, on recommendation 9 of the committee report, which concerns the issue of current levels of mortality being too high and the need to bring them down. We heard from the previous witnesses that mortalities were pretty constant across the industry. Could somebody tell me whether you are making improvements on mortalities and whether the mortalities in 2020 are reflective of previous years?

Anne Anderson: It is two years since we were last discussed this topic with you and we have provided you with the details of substantial investments across a broad range of actions and activities that have been made in order to improve the survival rates of Scottish farmed salmon. We are 13 generations away from wild salmon and our survival rate or annual average, as we have indicated in the information to you, is 85.5 per cent, which means that 17 out of every 20 salmon in the marine pen survive. By comparison, when you think about the 13 generations, I understand from a close dialogue with Fisheries Management Scotland that recent studies in Ireland indicate a very sad survival rate of less than 5 per cent for marine wild salmon.

Integrated health management is key to establishing and driving upwards our survival rates. The investment at the freshwater stages starts at the egg stage, where we look at genetics, securing and then analysing them—

The Convener: I am going to interrupt you. I asked a specific question about whether the survival rate this year was the same as in previous years. Earlier, the regulator said that they were fairly constant. Is that the case? I understand that you are doing a lot of work, but I am asking whether the two facts that we have been given are correct.

Anne Anderson: The on-going survival rates on farm are slowly reducing. That constant nature is as a consequence of isolated and rare conditions where we have high mortality events, which is why that average figure looks to be—and is, as you state—constant. There is a difference between routine farm mortality and addressing, understanding and being able to respond to the issues that Mr Allan spoke about around environmental impacts, compromising our fish, understanding that process and providing a range of actions to support greater survival through those incidents.

The Convener: Ben Hadfield, do you want to try to answer the specific questions? Are the rates about the same as previous years, as we have been told earlier? Are the rates for this year the same? I have a follow-up question that I want to ask.

Ben Hadfield: The rates have been similar—around 15 per cent in the marine phase. The reasons for the mortality have moved away from sea lice and treatment losses and have moved on to gill health issues, which is a reflection of the temperatures that we have had in 2020 particularly, the light levels and the concentration of algae in the sea water. Basically, the level is similar but the reasons for mortality have changed.

The Convener: That is interesting because I did a bit of research prior to this meeting and I found your figures very difficult to understand, because you give mortalities in percentages of production. Taking three months—based on the figures that SEPA have given us—in June there were 1,500 tonnes of salmon that had died, in July there were 2,200 tonnes of salmon that had died, and in August there were 5,150 tonnes of salmon that had died. That is 8,800 tonnes, which would require more than 300 articulated lorries to move, which effectively is enough lorries to stack up the roads between here and Murrayfield.

What we are saying—Tavish Scott might not like to hear this—is that the committee raised a question in recommendation 9 of its report about the mortalities being too high and I am concerned

that they remain too high. Can you give me some confidence that those figures are abnormal, or are they normal and acceptable?

Ben Hadfield: Nobody is more worried about mortality than the people who are involved in this industry and take a wage or run a company. The most difficult conversations that I have with my bosses and board is about mortality increasing or staying stubbornly high, but you cannot just wave a magic wand and demand that it comes down. The industry is doing its utmost to address this issue and is making real progress.

In 2019, the majority of our mortality was from a bacterial disease called *Pasteurella skyensis*. Prior to an outbreak in 2019, it had been a curiosity in Scotland. Within a space of a year we had a vaccine and a complete absence from detection in our farms. I know that other companies are doing great work on sea lice control and treatments and innovation with regard to closed containment, semi-closed containment and large smolts. When this Covid situation is resolved, as it will be, hopefully, in the spring, you should visit us and look at what is being done. It is impressive, but the rates are still stubbornly high, for different reasons. We are bringing all the resources that we can to bear on that and no one is more committed than the key players in the industry.

We are happy to write to you and give you complete clarity on that and list all the things that are being done because, quite frankly, I am impressed, and I am proud of the sector.

The Convener: I understand that a lot is being done and I understand the commercial reasons for reducing mortality.

Anne Anderson: I refer you to an earlier answer that I gave around the importance of the regulatory regime balancing fish health and the environment. That is an utterly key point when you look at that marine space and the welfare of the fish balanced with welfare of the environment and other species within it. We are working closely with others, and I hope that Sheila Voas will be leading very early the discussion and dialogue around access to and use of medicines. They are an essential part of managing the health of anyone, including ourselves.

Having access to the right volumes of medicine, delivered suitably and in balance, is key. It is one of the reasons why we believe the regulatory regime for our farming activity in the sea needs some innovation around it in order to bring those different competing remits together and assess the activity in the one place at the one time, in balance.

The Convener: The next question will be from Mike Rumbles.

Mike Rumbles: Good morning, panel—and a particular welcome to Tavish Scott, my ex-party leader. Tavish, that does not mean that I am going to give you an easy question.

In our report of two years ago, the committee highlighted:

“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.”

In the SSPO’s submission for the committee meeting today, in your update, you said:

“The sector has complied with the provision of mandatory data to all regulators.”

I would expect you to do that, of course. That is absolutely right. As I understand it, member companies of the SSPO that also operate in Norway publish far more detailed data on a farm-by-farm basis and in a shorter timescale than we do in Scotland. First, am I correct in making that statement? Secondly, if I am correct in making it, why can the member organisations that are doing that in Norway not do it in Scotland voluntarily?

The Convener: I will come to Tavish Scott first, and then I think it is only fair that Ben Hadfield, who works in both environments, should comment.

Tavish Scott: Thank you. It is very good to see you, Mr Rumbles. I seem to remember that you asked me more difficult questions when I was the leader of a political party, but I take your point entirely seriously.

Anne Anderson and Ben Hadfield can speak to the situation in Norway, but I think that I am right—and, again, my colleagues will correct me if I am wrong—in saying that Scotland publishes more data in this area than any other salmon-producing nation across the world. However, it is important to recognise the point about whether data could be produced in a more transparent or easily understood manner. We will take that point and look at it. It would probably be best to have Ben draw the parallel with Norway, given the international comparisons and, indeed, his expertise.

Ben Hadfield: The progress that was made to the present mortality rate was good, but the data is not as well presented as it is in Norway. Norway has a system called BarentsWatch, which presents climatic and oceanographic data. It presents wild capture fisheries data and it presents disease mortality, sea lice and aquaculture data. We are willing to undertake and push for the development of that here, so that the data is more easily read and accessible. If you

know the industry—and many people do—you can gain a lot from looking at the SSPO’s website.

12:00

On the difference between Norway and Scotland, we want to be transparent and we want to present the data, but we do not want our industry to be subjected to unfair attacks and criticism. We are a mature industry, and we are quite willing to take criticism and then reflect and change. In Scotland, as you know, we have a number of activists that focus specifically on a company when mortality is occurring. That is really unhelpful, because, if you are a fish farmer and you care about your stock and your business, your focus is on managing the situation and preventing further mortality and getting full control. Having to deal with activism is a concern for some people, so some farmers have been reluctant to go down the transparency route, and the SSPO has helped them to achieve that. We will take on board the BarentsWatch system in Norway, which was funded by the Government at great expense. It is better on presentation, and we will work on the issue going forward.

Mike Rumbles: Ben, I understand absolutely what you are saying, but your company does that in Norway. You must have an internal company system for responding in that way, but you do not do it here. I know that the regulatory system is different here, but what I am asking is why it is not done voluntarily. It is two years since the issue was raised. You say that you are willing to look at it, but we have been talking about it for two years. Can we have some real progress? I am trying to be supportive here, and I think that it is in your own interests. If you are doing that in Norway, you should be able to do it here. You say that you are aware of unfair attitudes and criticism, but one way of getting rid of that unfair criticism and those attitudes would be to be as open with the information—and as quickly—here as you are in Norway.

Ben Hadfield: I think that we are almost on the same page, if I can be as bold as to say that. My company was publishing the data in 2016, and then the industry moved to publish it just before the previous inquiry, in 2018. The granularity of the data has got better over time. You can go into any site owned by my company or other companies and look at the data records for mortality, the cause of mortality, sea lice and so on. What you want to see is there, but I am suggesting that we look to Norway on this occasion, as it has a very slick system of presenting environmental data, aquaculture data and climatic and oceanographic data. It was put together at great cost by the Norwegian Government, which is in possession of a

sovereign wealth fund that gives it a lot of resource. We are committed to improving our data over time but, frankly, we just do not have the budget, especially this year, to copy what Norway has done.

I hope that that answers your question. I do not think that we are far away. We have taken on board what you said about transparency, which I thought was good advice, and we have tried to follow that in the SSPO as a community.

The Convener: I think that you have answered Mike Rumbles's questions, so that takes us to the deputy convener, Maureen Watt.

Maureen Watt: Good afternoon, panel. Congratulations on your new job, Tavish—it is quite a challenge.

Let us move on to community benefits and community engagement. Clearly, the industry has its detractors, but are there any detractors within the communities that you work in? If so, what is the basis for their concerns about fish farming?

The Convener: Who would like to head off with that? Tavish, do you want to start? I can then probably push it to Ben Hadfield, as he is working in communities.

Tavish Scott: Good afternoon, Maureen. It is very nice to see you. You ask a good question. May I put on my old hat as an MSP for Shetland? Yes, of course, there are such individuals even in the islands, where the industry employs 2,000 people indirectly and directly and is very important economically and hugely influential in terms of the wealth in the community and how much money goes back into the community in terms of wages and taxes—you name it. Are there people who are, as we would say in Shetland, ill pleased? Yes, of course there are. There are always going to be detractors.

What we are seeking to do—it is one of the key points in our sustainability charter—is establish, in consultation with the Government, a structured community funding mechanism to ensure that local areas benefit from the fact that the salmon sector is in those communities. That will not solve all the problems of those who simply wish to oppose the sector, but it will possibly give a little more structure to the very significant investment that Ben Hadfield's company, for example, and all our member companies have made in the localities that they farm in, whether it be in playing fields, in sponsoring shinty teams or in lots of different things up in Shetland that I have been part of for many years.

In conjunction with the Government, we will put in place a more structured approach to that investment, and we will be very happy to come

back to you with more details of that as the policy develops.

Maureen Watt: Do you have any idea how that will work in practice currently?

The Convener: Tavish, did you get that?

Tavish Scott: Yes, thank you, convener. Perhaps Ben Hadfield could talk about the situation right now. I am well aware, in a local context, of what individual member companies have done to support local communities, and I am saying that we will work with the Government and, indeed, others—local people and local groups—to drive what I think is very much a shared agenda between our sector and your committee in order to come up with the right mechanism to deliver that support.

Ben Hadfield: We enjoy a lot of support from the communities that we work within, but they are very much the silent majority. Most of them are getting on with their lives, enjoying a career and bringing up their families while being involved in aquaculture, whether that is in Unst or Lewis, Orkney or Shetland. They are great people. I am an Englishman; I have lived here for 20 years and I have worked for 20 years alongside them, and they are passionate about what they do. The benefits are an average wage of around £37,000, the community development, the infrastructure and the career development. It is all extremely positive, stemming from aquaculture. That takes nothing away from the fact that we have an active and sometimes quite vociferous base of critique. I do not want to dismiss the claims, but we enjoy a lot of support from the communities—and rightly.

We are focused on increasing our transparency, and I am sure that Tavish Scott, as the head of the SSPO, is able to speak with authority on the benefits of aquaculture to remote coastal communities and to Scotland as a whole. He is able, with his team, to address some of the issues that we are criticised on. We will step forward and take that in a more and more open way, being proud of what we do but accepting that we need to make improvements along the way.

Maureen Watt: Your new charter commits you to developing high-quality, affordable and green housing in partnership with local authorities, the Government and other partners. Do you see a big role for your charter in developing climate change policies?

In case the convener does not let me in again, I ask for a quick comment—probably from Tavish Scott—on the news today about Grieg Seafood, which operates in Shetland and Skye, ceasing its operations in Scotland. Is that a portent of something further to come from other companies, or what is behind it?

The Convener: Tavish, do you want to head off on that?

Tavish Scott: I will let Anne Anderson deal with the very good question about housing and the sustainability charter.

On Grieg Seafood, I believe that, although this is a worrying time for the couple of hundred people—whom I well know—back in Shetland, the Grieg Seafood strategy of seeking over the next period of months to divest itself of its Shetland assets—the farms and the processing factory in Lerwick—will lead to a process whereby those assets are taken on by another company. I do not think there is any doubt about that whatsoever. I also think that there will be a seamless transfer. Although the corporate brand on the boiler suits and the survival suit may change, I have no doubt that the very able staff who currently work for Grieg Seafood—who are brilliant people in the salmon farming sector—will soon be working for someone else. I do not know what the timescale for that will be, and I certainly do not know who will end up being the owner of those assets, but it is a great operation and I have no doubt that it will soon be, at some stage, operated by someone else. I hope that that is some reassurance to the committee—and, if I may say so, to lots of people whom I personally know.

The Convener: I ask Anne Anderson to be succinct in her answer on the green issues that Maureen Watt has raised.

Anne Anderson: Our intention throughout the strategy—not just in what it says on housing, which references working in partnership with local authorities, Government and others—is to ensure that, where we need to provide suitable, safe and sustainable actions for our business and our people, we are also able to benefit those communities. Indeed, that is our belief around access to land for electric vehicle charging.

Doing that in a public-private partnership context is also interwoven when you look at other sectors that are operating adjacent to us. The challenge that we all face in rural parts of Scotland is in identifying suitable housing stock that is currently utilised as either second homes or the self-catering market. We are making sure that every action that we take is complementary to that bigger piece and that it is taken, wherever possible, in partnership with other businesses that we work alongside and with the communities that we are part of. As I indicated earlier, that is key to the approach that we have taken right the way through our charter.

The Convener: Thank you very much, Anne. The last questions are from Emma Harper.

Emma Harper: It is always difficult to be last, because I will need to be succinct. I am going to

ask a couple of questions about innovation and technology. Everybody is doing something different to improve salmon farming—I have about 12 tabs open on my computer—whether it is filtration of water systems, oxygenation, medicines or food approaches. Can you outline what role you are playing in researching and developing new forms of technology to improve the performance of salmon fisheries?

I will ask my second question at the same time. What is the SSPO's current position on closed containment forms of aquaculture? I am reading about semi-closed containment proposals for the likes of Loch Long Salmon.

That is two questions, on technology and innovation and then on closed containment.

The Convener: I fear that that could open the floodgates to every single thing that is being done, which could take us up to tea time, I suspect. Tavish, do you want to start on closed containment? I will then ask Ben Hadfield and Anne Anderson to make a couple of salient points on what is being done.

Tavish Scott: In the interests of brevity, convener, I am going to pass the buck completely to Ben and Anne on this one, because they will give you a succinct answer when I simply could not.

The Convener: You would not have done that when you were a politician. However, on the basis that you are now passing it to Ben Hadfield, I will let Ben go first, followed by Anne.

Ben Hadfield: That gives you an indication of how much innovation takes place in the salmon sector.

We have forms of closed containment in our recirculating aquaculture systems—RAS—in which we farm smolts. Many companies are looking at whether these things can be done on land, but there is a general negativity about that among traditional salmon farms because it has a CO₂ emissions profile that is much greater than the benefit that we get from using nature to farm high-quality fish in the ocean, where the waste is assimilated sustainably.

With all the respect in the world, I think that anyone who rushes to closed containment or on-land salmon farming as a panacea needs to spend more time understanding the impacts that will stem from those methods. Having said that, a number of companies are looking at hybrid approaches whereby they would grow larger fish on land and reduce the cycle in the sea for environmental and sustainability benefits relative to waste production. A number of companies are looking at semi-closed containment whereby you can exclude sea lice by using skirts around the

pens or by pumping water from depth. Much of that is already taking place on the farms at the moment.

12:15

When any sector is developing at pace, there is a surge of new companies moving into the sector. Some of those are looking at closed containment and bringing the waste on-land for treatment. It may work, but I am personally sceptical about that, because they are bringing large amounts of effluent with a high salt content on-land, which may cause more problems and may not be necessary.

In summary, many companies are looking at hybrids of semi-closed containment to expand production or improve sustainability in the sea.

The final point that I would make is that it is really important that Scotland leads on this, because of all the benefits that Tavish Scott referenced—I mentioned the value of the sector as Scotland's largest food producer and now as a quite high average wage payer with a career path—which we have to keep in Scotland. People are moving into, or touting the advent of, land-based farming, but that is more likely to be based in Florida and China. We do not want to lose the benefits of salmon farming from the west coast of Scotland or from the Highlands and Islands.

The Convener: Anne Anderson, would you like to come in on that?

Anne Anderson: I will build on Ben Hadfield's point. Scotland has a history of invention and innovation, and our sector is absolutely no different. We embrace innovation and research and development that leads to further innovation, investing across all the areas that you referenced and actively trialling and supporting SMEs—Tavish Scott referenced the 2,500 SME and supply chain businesses that we operate. We trial and test their inventions—from feeds to barriers to oxygenation units—across the different areas, continually seeking new partners. For example, during the Covid pandemic, we have been identifying new businesses within the central belt that can provide oxygen to us quickly.

We are constantly looking to see how we can mobilise those innovations not just in the lab but on a large scale, downsized to fit farms, so that laboratory research and ideas can materialise on the farms. There is a substantial range of such things, and I am happy to provide you with an update on the work that we have had under way through 2020, which will take us forward over the next two years.

Emma Harper: Innovation is worth more than a page. There is so much going on that it might be

worth exploring that in a further report—not an inquiry or anything, but just in more detail.

The Convener: That brings us to the end of our questions and partly to the end of a process in that we carried out our inquiry in 2018 recognising the importance of the salmon farming industry to Scotland and the need for the industry to lead the rest of the world. We will have time to reflect on the answers that we have heard today.

I thank Tavish Scott, Anne Anderson and Ben Hadfield for the answers that they have given us, which will enable us to question the cabinet secretary when he comes to the committee on 2 December. I also thank you in advance for the information that you have offered to send the committee—not only on innovation, but on the other details. The clerks will be in touch with you about a couple of those things, Tavish. Thank you very much for your time on what is clearly a very important industry for Scotland.

European Union (Withdrawal) Act 2018

Common Fisheries Policy (Amendment etc) (EU Exit) (No 2) Regulations 2020

Import of and Trade in Animals and Animal Products (Miscellaneous Amendments) (EU Exit) Regulations 2020

Official Controls (Animals, Feed and Food, Plant Health etc) Amendment) (EU Exit) Regulations 2020

12:19

The Convener: We move to item 3. We have received consent notifications in relation to three United Kingdom statutory instruments as detailed on the agenda. The instruments are being laid in the UK Parliament in relation to the European Union (Withdrawal) Act 2018. A couple of points are raised in our papers, and I wonder whether committee members have any comments that they want to make. I do not see anyone indicating that.

Does the committee agree to write to the Scottish Government to confirm that it is content for consent to be granted to the UK SIs that are referred to in the notification? Does the committee also wish to highlight the points that are raised in the briefing paper as part of that consent?

Members *indicated agreement.*

The Convener: I see nodding and thumbs up, so that is agreed. We now move into private session.

12:20

Meeting continued in private until 15:48.

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