SCOTTISH SALMON FARMING: SURVEY RESULTS

A Fidra study into consumer opinions on Scottish salmon

Fidra is a Scottish registered charity and SCIO no.SC043895

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Background

The salmon farming industry in Scotland has grown steadily since the 1970s and in 2016 brought in over £1.8 billion, making Scotland the 3rd largest producer of Atlantic salmon, behind Norway and Chile. This expansion has offered Scotland the opportunity to be a world leader in aquaculture, creating employment and exports, but its environmental impacts can be significant.

Fidra recognises that much work has been conducted between government, industry and retailers in the UK to establish some sustainable processes. Salmon farming has also attracted significant media interest and criticism from some civil society groups and individuals. However, the views of consumers are rarely sought and represented in these conversations, with few consumers truly understanding the nature of salmon farming in Scotland. To gain a better understanding of consumers perceptions and views on the Scottish salmon they buy , Fidra conducted a survey on the preferences and buying habits of those purchasing Scottish salmon in the UK. This report seeks to explain and analyse the responses to this survey.

Aims of the survey:

- To understand where participants purchase their salmon
- To establish what considerations influence buyers' choices when purchasing Scottish salmon
- To collect data on the percentage of people who understand that Scottish salmon is farmed
- To find out what additional information customers desire when buying Scottish salmon
- To gather data on the relative importance of environmental sustainability for customers

Methodology

Fidra worked with SurveyMonkey to recruit survey participants (SurveyMonkey Inc.; San Mateo, California, USA; www.surveymonkey.com) and a total of 672 UK based respondents answered our survey. Whilst 143 expressed in the first question that they did not eat Scottish salmon, 531 responded positively to this question, continuing with the survey questions. Respondents were primarily aged 31 – 40, female and in full time employment earning within the £21 – 30,000 income bracket.

Survey results

The two most important factors selected by respondents in choosing Scottish salmon products were freshness and price; the least important were ease of cooking and the product being certified organic.

Sustainability

Our survey results demonstrated that consumers of Scottish salmon are concerned about the sustainability of the products they buy. When asked directly if they would be happy to pay more for salmon produced sustainably, 80% of respondents answered yes or maybe.
When asked how much Scottish salmon on sale in the UK was farmed, only 5% answered correctly that it is all (100%) farmed. 94% of respondents believed there was a mix of farmed and wild salmon available to purchase, and 1% believed that all Scottish salmon sold was wild caught. This demonstrated a significant lack of clarity on the industry.

This result, coupled with the response that the majority of participants would like more information on the salmon they are buying, shows us that retailers and producers need to do more to inform their customers about how Scottish salmon is sourced. From the survey results, we understand that the majority of participants, 64%, would like to see more information about the products they are buying on the product labels.

Interestingly, 86% of participants highlighted that they would be keen to know the name of the farm the salmon was sourced from; 40% of which expressed it would be especially interesting if they could easily find further information about the farm, for example, online.

Summary and Recommendations

Overall, from this survey we have learned that consumers have neither the understanding that all Scottish salmon on sale in the UK is farmed, nor the means to find out this information or learn more about the salmon they are buying. Yet, there is a clear desire to be able to access further information about the quality of the salmon they are buying and eating, and a big part of this involves understanding the processes involved in farming and production.

Fidra acknowledges the significance of participants expressing the desire for more information to be presented on the packaging of the salmon products they are buying. Fidra believes that there can be solutions and practices put in place to aid this process, increasing the information available to customers, and makes the following recommendations:

1) Retailers label salmon products with farm of origin.

2) Retailers support the call for accessible, transparent, real time information on environmental and sustainability issues to be available on a farm by farm basis online, to enable the consumer to access information on the salmon they are buying.

3) Environmental and sustainability issues are important to consumers, so farming practices need to reflect this by reducing reliance on chemicals known to impact wildlife and moving towards more enclosed structures for treatment and waste capture.

4) In view of consumer concern around environmental sustainability issues, no expansion in Scottish farming should take place until environmental issues are addressed.

Fidra's Best Fishes Project

The survey was conducted as part of Fidra's Best Fishes project which aims to minimise the environmental impact of Scottish salmon farming (https://www.bestfishes.org.uk/). Fidra welcomes further discussion on meeting consumer expectations, please contact report author Dr Clare Cavers for further information clare.cavers@fidra.org.uk.

Fidra's mission is to address specific environmental issues by developing pragmatic and proportionate responses through collaborative dialogue with the public, industry and government to ultimately achieve targeted and effective solutions. Fidra currently works on several projects relating to the environment, details of which are available on our website https://www.fidra.org.uk/.

Introduction and Background

The salmon farming industry in Scotland has grown steadily since the 1970s and in 2016 brought in over £1.8 billion[1], making Scotland the 3rd largest producer of Atlantic salmon, behind Norway and Chile. This expansion has offered Scotland the opportunity to be a world leader in aquaculture, creating employment and exports, but its environmental impacts can be significant. The Scottish Government has made a commitment to support the Aquaculture Industry Leadership Group's growth strategy to double the economic contribution of the sector to £3.6 billion and double the number of jobs to 18,000 by 2030[2]. Before expanding, Fidra believes the industry must ensure it is currently operating in a manner that ensures minimal impact on the environment. Once farms can be shown to be environmentally sustainable, then industry leaders, retailers, NGOs, certification and government bodies must work together, throughout the supply chain, to ensure any growth is achieved without compromising the environmental integrity of some of Scotland's unique habitats.

As part of its Best Fishes[3] project, Fidra is working with the aforementioned bodies to ensure that the relevant organisations are collaborating to lead the way to a safe and sustainable future by limiting the negative impacts of Scottish salmon farming on our communities, habitats and wildlife. The main impacts recognised by Fidra are as follows:

Table 1: Impacts of Scottish salmon farming

Issue	**Impact**
Feed	Fishmeal and fish oil in feed is sourced from wild fish populations which are considered to be at maximum sustainable yield.
Diseases	Sea lice are parasitic crustaceans that affect adult phase of salmon: open net pens (ONPs) may contribute to infection of wild fish.
Chemical treatments	Pesticides and antibiotics used in ONPs to combat sea lice and other diseases may affect wild marine life especially crustaceans.
Food waste and faeces	Uneaten food waste and fish faeces from ONPs can create anoxic conditions and affect wild marine habitats and organisms.
Predators	Concerns over interaction: • Farms are licensed to shoot predators including seals, which enter the farms to prey on fish. License conditions do not limit numbers. • Acoustic deterrent devices ADDs used to deter seals are not restricted by legislation, lose effectiveness over time and can affect cetacean navigation.
Fish escapes	Damage to ONPs from predators (i.e. seals) and bad weather can result in escaped farmed fish interacting with wild populations.

[1] https://aquaculture.scot/about-the-sector/
[2] https://www2.gov.scot/Topics/marine/Fish-Shellfish
[3] https://www.bestfishes.org.uk/

Survey

Fidra acknowledges that much work has been conducted between government, industry and retailers in the UK to establish sustainable processes. However, from engagement with retailers, Fidra recognises that consumers are often left out of this conversation with few consumers truly aware of the nature of salmon farming in Scotland.

To understand this knowledge and information gap better, Fidra conducted a survey on the preference and buying habits of consumers purchasing Scottish salmon in the UK. This report seeks to explain and analyse the responses to this survey.

Aims of the survey:

1. To understand where participants purchase their salmon
2. To establish what considerations influence buyers' choices when purchasing Scottish salmon e.g. price, freshness, certifications etc.
3. To find out current understanding of Scottish salmon production
4. To find out what additional information customers desire to help inform their choices when buying Scottish salmon
5. To gather data on the relative the importance of environmental sustainability for customers

Methodology

For this survey, Fidra worked with SurveyMonkey (SurveyMonkey Inc.; San Mateo, California, USA; www.surveymonkey.com)

Information on how respondents are recruited to SurveyMonkey is available here: www.surveymonkey.com/mp/audience.

A total of 672 UK based respondents answered our survey. Whilst 143 expressed in the first question that they did not eat Scottish salmon, 531 responded positively to this question, continuing with the survey questions. An average of 528.8 people responded to each question.

This survey asked participants 21 questions, split between 5 different sections which sought detail on: demographic, shopping habits, influencing factors when buying salmon, knowledge about salmon farming and labelling.

The data was collected from the SurveyMonkey audience between 11 am and 12 pm on 18th December 2019.

Survey results

Demographic

Due to Fidra's focused approach, working with UK based supermarkets and retailers, it was necessary that the respondents to this survey lived and shopped in the UK. This allowed us to gather relevant information to present to the bodies and organisations we have been working with to ensure there are limited environmental impacts from the Scottish salmon farming industry.

Respondents were primarily aged 31 – 40, female and in full time employment earning within the £21 – 30,000 income bracket (Figure 1).

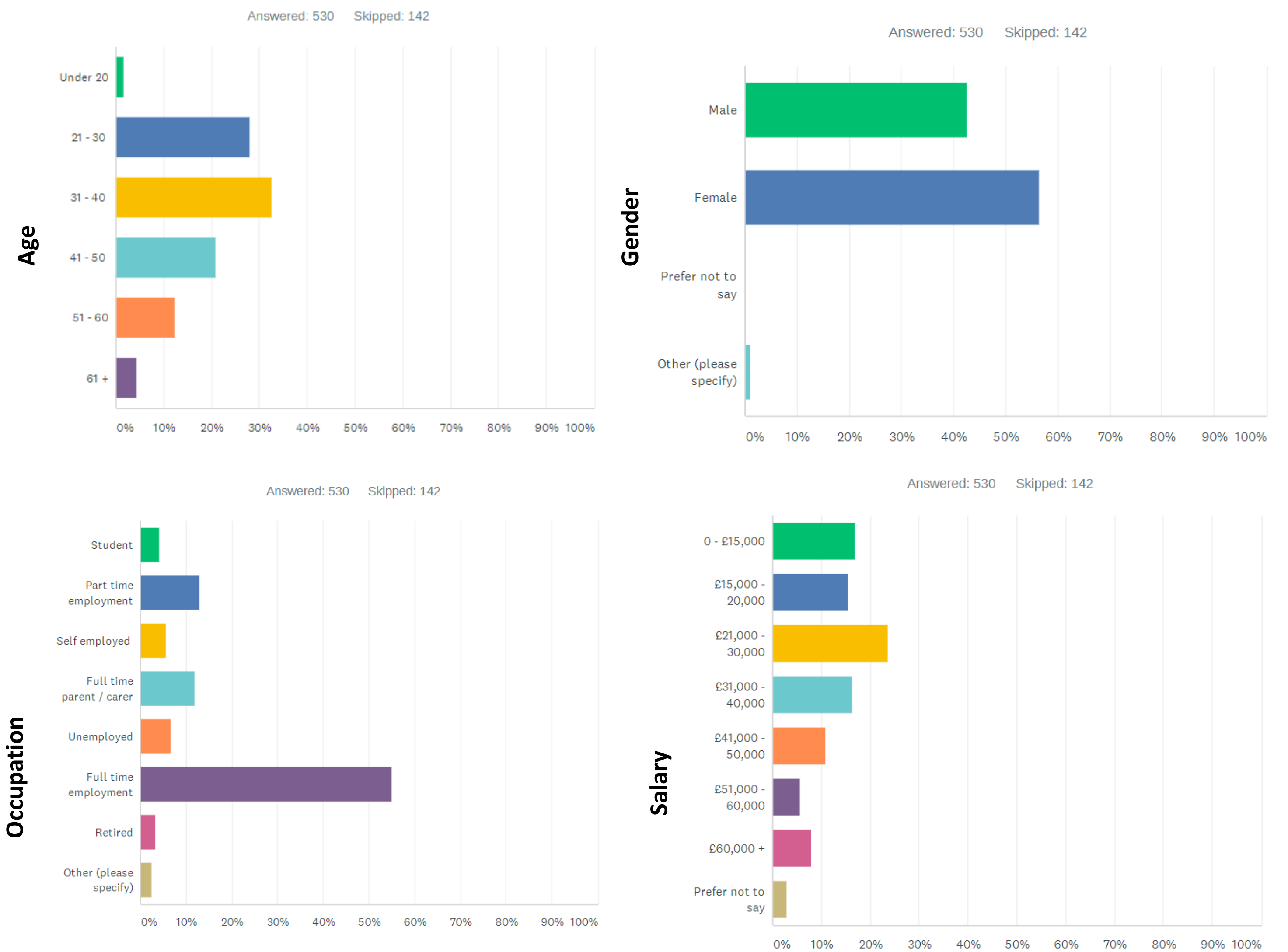

Fig. 1: Demographic

Shopping habits

The survey data also showed us that the majority of participants shopped at the UK's major supermarkets, with 43 participants selecting that they tend to buy their salmon produce from independent fish mongers. From those who do use supermarkets, participants primarily selected Asda (23%), with Tesco (22%) a close second option followed by Sainsbury's (15%), Aldi (12%) and Morrisons (11%). The remaining 17% were relatively evenly spread between the remaining 5 supermarkets (Figure 2).

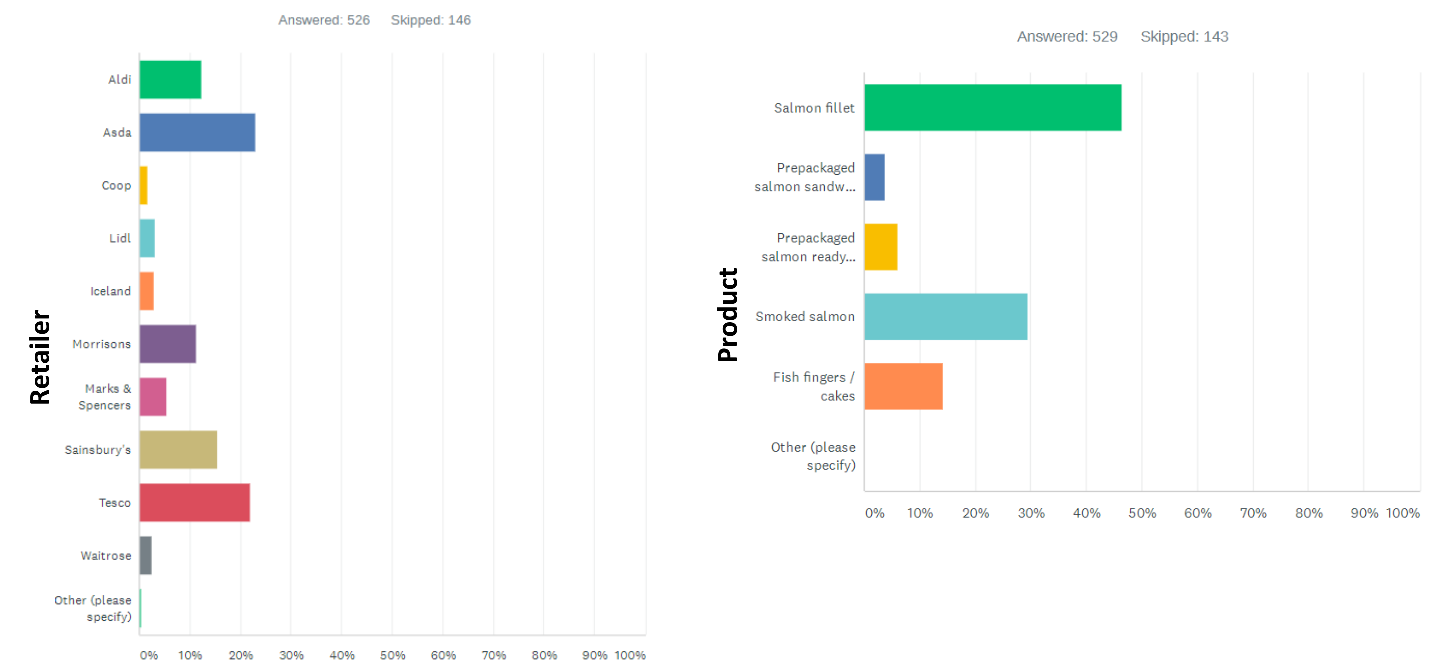

Fig. 2: Shopping habits

In terms of the salmon product customers bought, salmon fillet was the most popular choice, followed by smoked salmon (Figure 2).

Determining factors

When asked to select the two most important factors in choosing Scottish salmon products, the majority of participants selected freshness (58%) followed by price (40%). We had predicted that price would be a key determining factor in participants, but freshness far surpassed this (Figure 3). Apart from price the physical qualities of salmon were the most important; freshness, colour and look of the salmon and taste.

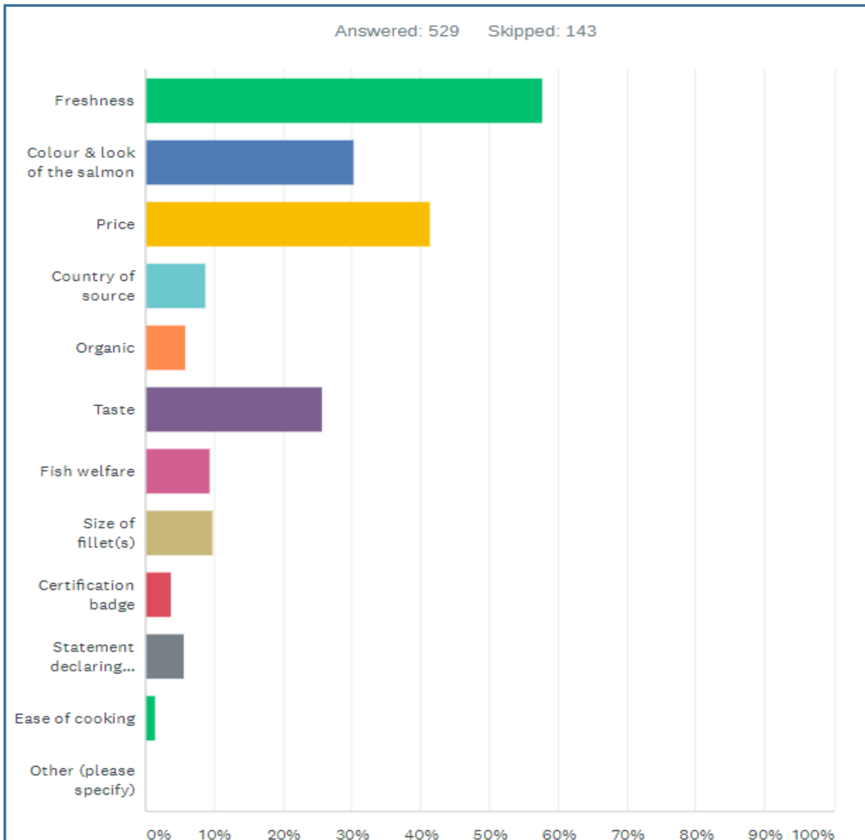

Fig. 3: Most important when buying salmon

When asked to rate elements as least important, respondents selected the ease of cooking (33%) and the product being certified organic (27%) (Figure 4). One participant commented that they felt that **"nothing is unimportant"** when it comes to choosing Scottish salmon.

It is interesting to observe that price was both the third least important factor (25%) and the second most important when consumers were deciding which product to buy. We assume that these responses could have been selected primarily because respondents recognise this option as an easy, understandable option to select. Factors such as 'Statement declaring sustainability of product' is complex and may not be as easily understood as 'price'.

A later question asked participants about the impact of cost directly in regard to whether or not they would be willing to pay more for salmon which has been produced sustainably. Only 21% of people answered that they would not be happy to pay more, with 79% responding that either they would be happy to pay more for sustainable produced salmon, or that they had no strong feeling on the matter (Figure 5).

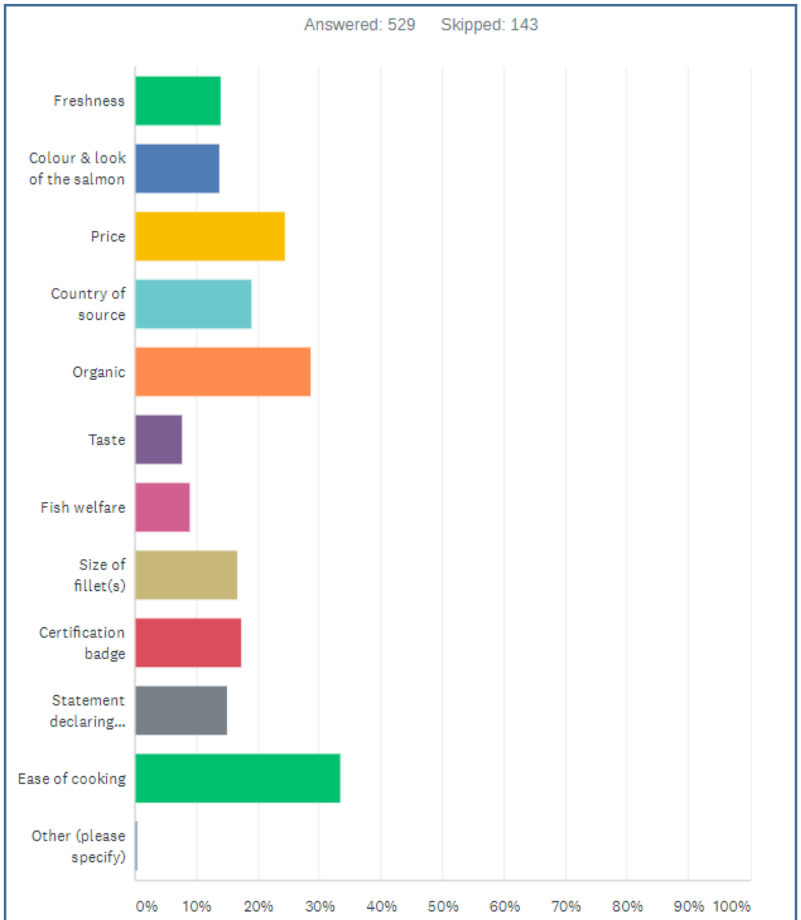

Fig. 4: Least important when buying salmon

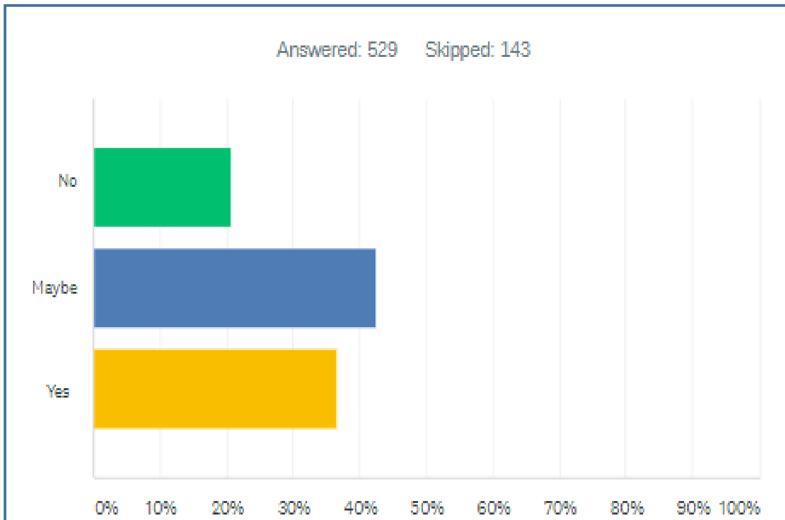

Fig. 5: Would pay more for sustainably sourced salmon

Certification

Given Fidra's ongoing work with various certification and regulatory bodies, it was important to establish which certification standard, if any, consumers look for when purchasing their salmon products.

Unsurprisingly, the most popular answer to this question referred to 'any' of the listed schemes rather than one particular body standing out, with 38% selecting this option. This tells us that consumers like to see, and trust, a badge or logo demonstrating that an external body has been involved in overseeing the farming and production process. 21% did not look for certifications or logos.

For NGOs and organisations that are looking to promote one certification or regulatory body over another based on quality, for example, this survey results tells us that this might be unnecessary in the eyes of the consumer. They are not looking for specific brands, but rather reassurance that an external body has, literally, given the product their stamp of approval.

Regardless, Fidra feel reassured that consumers tended to look for the Aquaculture Stewardship Council (ASC) more than others, with 25% of respondents selecting this option. The ASC standard is the most rigorous in environmental terms on the market at this time compared to other available certification schemes. However, the salmon industry still has major environmental consequences despite widespread use of certification, suggesting that no current schemes are strong enough to prevent environmental degradation.

Knowledge about Scottish salmon farming

It was important for Fidra to establish how much consumers felt they knew about the Scottish salmon farming industry. It is our experience that many people are unaware that all Scottish salmon is farmed.

This was further demonstrated through our survey as when asked what percentage of Scottish salmon was farmed, just 5% of respondents answered, correctly, that they thought it all (100%) was. 1% of respondents thought that none was farmed, and therefore all Scottish salmon was wild. A highly significant proportion, 94% believed that there was a mix of farmed and wild caught salmon (Figure 7).

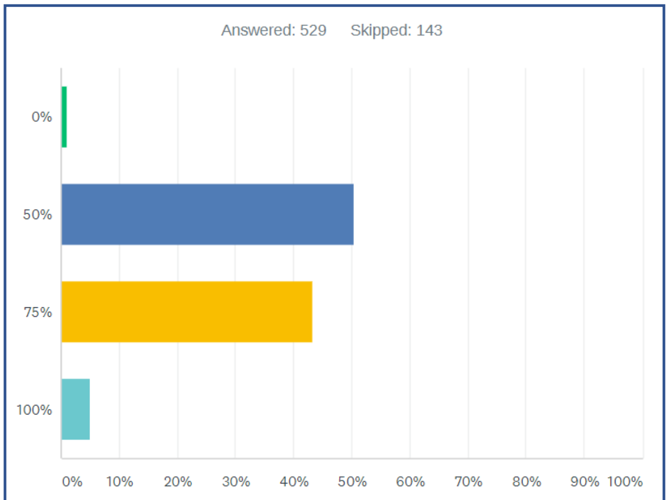

Fig. 7: Percentage farmed ?

With the majority of consumers unaware that all the Scottish salmon they buy is farmed leaves the industry open to criticism from those who believe the product they are buying is wild caught. This presents a challenge for policy makers who may wish to gain support for their ambitions to see the industry grow. Fidra recommend a greater degree of transparency around the practices in Scottish salmon farming so that consumers are better informed and industry and policy makers are reflecting the needs and interests of consumers.

When asked if they would like to know more about Scottish salmon farming, 86% responded yes or maybe (Figure 8). These results indicate that retailers and the salmon farming industry and retailers need to do more to inform their customers how Scottish salmon is being produced to allow consumers to make informed consumer choices on the products they buy.

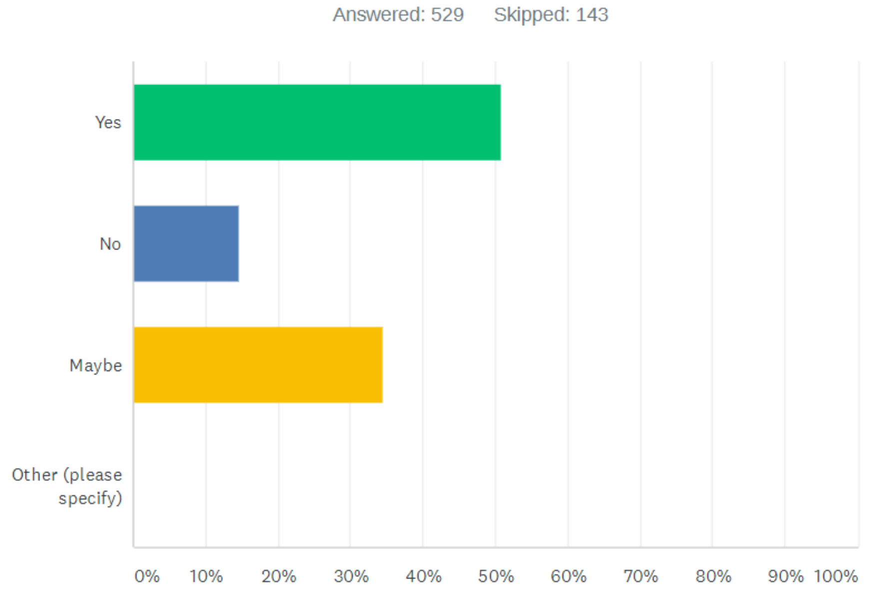

Fig. 8: More information desired?

From conversations that Fidra have had with Aquaculture Managers, or equivalent, from retailers in the UK, there seems to be an acceptance of the assumption that customers "defer responsibility to the retailer" (personal communication, September 2018). Retailers claim that customers expect them to make the best decisions about the products they serve, and consumers trust that the products available to buy are not going to cause intentional environmental and / or social harm. From this survey, it is apparent that customers do not fully understand how salmon is being sourced, and feel retailers could be offering more information.

A later question asks participants specifically about how they would like to receive this information on how salmon is produced, to which participants responded strongly (64%) that their preference would be to have more information printed on the label of the product they are buying (Figure 9). Having information printed on the label of the product, makes details easily and immediately accessible for customers and allows them to compare the farming standards and practices of a variety of products at the moment of decision making, rather than requiring them to look up information online, for example.

ANSWER CHOICES		RESPONSES	
On the packaging		64.33%	339
Via an App, QR code or barcode on the product		20.30%	107
On the internet via the retailer/brand's website		29.79%	157
Through information in store e.g. leaflets, signage, in-store publications		17.27%	91
I don't want to see more information		3.80%	20
Other (please specify)	Responses	0.19%	1
Total Respondents: 527			

Fig. 9: How customers would like to find out more information

As part of this survey, Fidra asked respondents whether they felt it would be of interest to customers to know the name of the farm Scottish salmon products are sourced from (Figure 10). A total of 46% of participants responded that it would be of interest to know where the salmon is farmed. Following this, the second most popular response of 40% was that it would be interesting to know which farm the salmon is from, with the provision that the customer was able to find further information about the farm, for example through an online resource. Therefore a highly significant total of 86% would like the name of the farm on the label.

In this question, the least popular responses were that this information would not be of interest. Once again, this information tells us that people are keen to receive as much information as they can about the products they are buying, and the food they are eating.

ANSWER CHOICES		RESPONSES	
...interesting, as it shows where the salmon is from.		45.92%	242
...interesting, but only if I can easily find out more information about the farm e.g. online.		40.04%	211
...of no interest, I would prefer to know the region/loch it is farmed in.		9.30%	49
...of no interest, I'm not concerned exactly where it's from.		4.55%	24
Other (please specify)	Responses	0.19%	1
TOTAL			527

Fig. 10: Having the name of the farm on the label would be…

Summary and Recommendations

Overall, from this survey we have learned that consumers have neither the understanding that all Scottish salmon is farmed, nor the means to access this information. Yet, there is a clear desire from consumers to be able to find out about the quality and impact of the salmon they are buying and eating, and a big part of this involves understanding the processes involved in farming and production.

Fidra are keen to continue to work with retailers, industry, certification and regulatory bodies and government to ensure that Scottish salmon is produced in the best possible manner, and minimize negative impacts on our unique habitats.

Fidra believe that it is important that all relevant bodies work closely together to provide clear, coherent information to the public about the practices and impacts involved in Scottish salmon farming. With 86% of respondents indicating they would like to see the farm named on packaging, and half of these indicating a wish to be able to find further information about the farm online, Fidra feel that one way that this could be achieved is through the production and publishing of an online, centralised Sustainability Dashboard, which would hold information on every farm producing salmon in Scotland.

Box 1: Sustainability dashboard concept

> The concept of a 'sustainability dashboard' refers to a fully web-based solution for calculating and displaying real-time data on environmental criteria to provide at-a-glance views of key performance indicators directly on computer screens and mobile devices of stakeholders. Where stakeholders include consumers, retailers, processors, producers, regulators, Scottish Government departments, certification bodies, NGOs, local (to salmon farm) communities.

Alongside side this, Fidra acknowledges the significance of participants expressing the desire for more information to be presented on the packaging of the salmon products they are buying. There are several ways in which this could be done, and additional information can be accessed, from putting the farm name on packaging and having a comprehensive database online with information on a farm by farm basis, to blockchains (Box 2).

Box 2: Examples of supply chain information in use and in development

1. In Norway the Barents Watch website[4] and Nofima portal[5] have been developed and continue to be reviewed, giving detailed information on individual farms and about the industry.
2. GLOBALG.A.P. use a number called a GGN code that at present leads to website pages for individual companies[6], and is being developed to lead to website pages for individual farms, already developed for horticulture[7].
3. IBM has developed a blockchain platform[8] with several food production companies, where a QR code is used to show data on the product. It is in use by French retailer Carrefour[9] for its Atlantic salmon products from Norwegian producer Lerøy.
4. Retailers display name of farm on product packaging, with corresponding data available on Scotland Aquaculture database[10] and Scotland Environment website[11]. A current review of the Scotland Aquaculture website is developing a more accessible and user-friendly design.

Recommendations

Fidra believes that putting such solutions and practises in place and increasing the information available to customers is a crucial step towards increasing consumer confidence, and makes the following recommendations:

1) Retailers label salmon products with farm of origin and ensure there is a corresponding comprehensive online information portal which will provide information on that farm.

[4] https://www.barentswatch.no/en/
[5] https://www.barentswatch.no/en/havbruk
[6] https://aquaculture.ggn.org/en/meet-your-farm.html
[7] https://floriculture.ggn.org/Flori/Index
[8] https://www.ibm.com/blockchain/solutions/food-trust
[9] https://www.intrafish.com/technology/leroy-carrefour-turn-to-blockchain-tech-for-fresh-salmon-line/2-1-747736
[10] http://aquaculture.scotland.gov.uk/
[11] https://www.environment.gov.scot/data/data-analysis/marine-fish-farm/

2) Retailers support the call for accessible, transparent, real time information on environmental and sustainability issues to be available on a farm by farm basis online, to enable the consumer to access information on the salmon they are buying.

3) Environmental and sustainability issues are important to consumers, so farming practices need to reflect this by reducing reliance on chemicals known to impact wildlife and moving towards more enclosed structures for treatment and waste capture.

4) In view of consumer concern around environmental sustainability issues, no expansion in Scottish farming should take place until environmental issues are addressed.

Concluding statement

The Scottish Government has made a commitment to support the Aquaculture Industry Leadership Group's growth strategy[12] to double the economic contribution of the sector to £3.6 billion, and double the number of jobs to 18,000 by 2030. It is now crucial for NGO's, industry and regulation to work together to ensure that Scotland's unique environment is not further harmed by the Scottish salmon farming industry, a significant contributor to Scotland's economy.

It is vital that the industry ensures it is operating transparently in a manner that ensures minimal impact on the environment. Present farms must therefore be assessed and those that cannot be shown to be environmentally sustainable must be addressed, for example by relocation or closure. Then industry leaders, retailers, NGOs, certification and government bodies must work together, throughout the supply chain, to ensure any growth is achieved without compromising the environmental integrity of some of Scotland's most remote communities and unique habitats.

Fidra's Best Fishes Project

The survey was conducted as part of Fidra's Best Fishes project which aims to minimise the environmental impact of Scottish salmon farming (https://www.bestfishes.org.uk/). Fidra welcomes further discussion on meeting consumer expectations, please contact report author Dr Clare Cavers for further information clare.cavers@fidra.org.uk.

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[12] https://aquaculture.scot/