

SALMON FARMING IN SCOTLAND

Briefing Note
January 2019



Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

SUMMARY

1. In little more than 40 years, salmon farming has developed from pioneering research in the West highlands into Scotland's most valuable food export. The industry continues to adapt and evolve as it addresses the many challenges that accompany such success. The global expansion of farmed salmon production defies the Scottish industry to grow its 7% market share or lose status and reputation in the face of growing consumer demand.

BACKGROUND

2. In its evolution from the 1970s the Scottish salmon farming industry has come to be dominated by large multinational operators with multiple production and processing locations around Scotland. This mirrors development of the industry in Norway, Canada and now Chile.
3. Worldwide the industry produces 2.5 million tonnes of farmed salmon, supporting 132,000 jobs and providing 17.5 billion meals each year.
4. Highlands and Islands Enterprise (HIE) (and the Highlands and Islands Development Board (HIDB) before it) recognised the positive contribution this industry could make to the Highlands and Islands - and increasingly to Scotland – investing heavily in the early years of the industry's development and at key periods since. Subsequently the industry's needs have revolved around innovation and international trade and investment. Investment by multinational operators can be fluid and HIE works with Scottish Development International (SDI) to develop relationships with these businesses at Scottish and head office levels.

FACTS AND FIGURES

5. Independent quantitative research commissioned by HIE on the 'Value of Aquaculture to Scotland'¹ (published June 2017) found that 10,340 jobs across Scotland were dependent on salmon farming, generating £540 million in gross value added and providing wages worth some £271 million.
6. The Scottish Fish Farm Production Survey for 2017² reported industry output was 189,707 tonnes and valued in excess of £1 billion. Salmon farming directly employed 1,722 people across freshwater and sea water farm sites.

While over 1 million salmon meals are consumed in the UK every day the industry also exports to over 60 countries with overseas sales worth more than £600 million making Scottish farmed salmon the UK's most valuable food export.

¹ HIE – Value of Aquaculture to Scotland (<http://www.hie.co.uk/regional-information/economic-reports-and-research/archive/value-of-aquaculture-2017.html>)

² Scottish Government - Scottish Fish Farm Productivity Survey 2017 (<https://www.gov.scot/publications/scottish-fish-farm-production-survey-2017/pages/8/>)

TABLE 1 – SALMON PRODUCTION TONNES (SCOTTISH FISH FARM PRODUCTION SURVEY 2017)

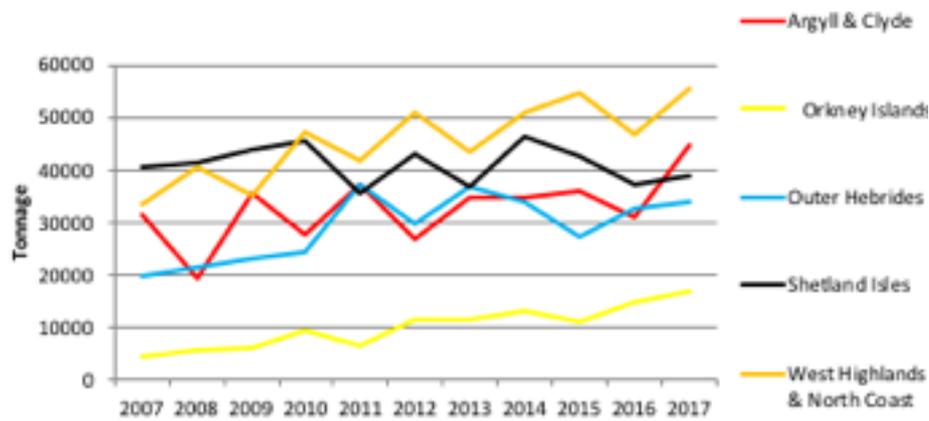
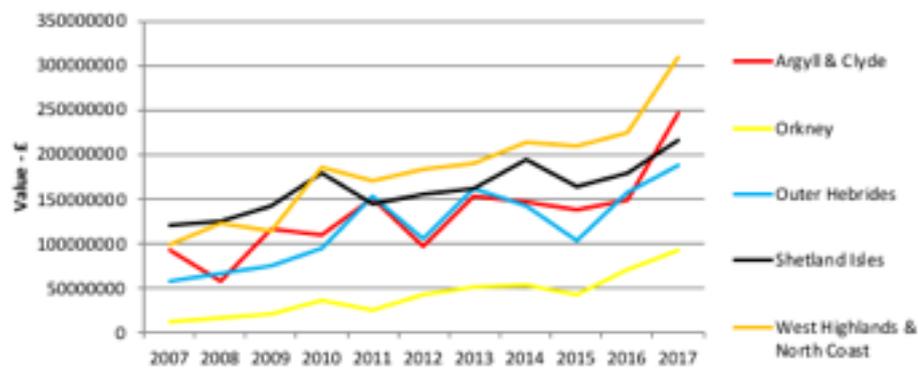


TABLE 2 – SALMON VALUE £ REAL PRICE - INFLATION ADJUSTED ON 2017 PRICE ESTIMATES (SCOTTISH FISH FARM PRODUCTION SURVEY 2017)



7. The industry has declared its ambition to double salmon value by 2030, a move which would clearly increase employment across the supply chain. This bold ambition coupled with supportive statements from Scottish Government and its agencies has stimulated confidence across indigenous supply chain businesses, evidenced by recent supply contract announcements:
 - a. Marine Harvest and Scottish Salmon Co sourcing feed barges from Gael Force;
 - b. Scottish Sea Farms spent £100 million on local goods and services in 2017 following their 2016 order for cages from Fusion Marine worth £900,000 a feed barge/ mooring system order with Gael Force worth almost £1 million and took delivery of a £500,000 service vessel from MacDuff Shipyards.
8. The salmon industry is currently spending some £400 million each year in Scotland on goods and services and as this industry grows and reinvests there is clearly an opportunity for Scottish based businesses. Substitution of aquaculture equipment imports also represents opportunity for these businesses which are also exploring export markets such as Canada, Iceland and Chile.
9. Scottish Government will host an Aquaculture Supply Chain Summit in spring 2019. The key theme will be competitive collaboration; how indigenous businesses can co-operate to unlock new opportunities and how supply chain business and producers can work together to sustainably and profitably grow.
10. The confidence felt across the wider supply chain in Scotland was demonstrated by record participation in the 2017 Aqua Nor exhibition through the first Scottish Pavilion at that show. Planning in underway for Aqua Nor 2019 in August.
11. Labour productivity has risen from 18 tonnes of salmon per FTE in 1987 to 135 tonnes per FTE in 2017. Improvements to efficiency and competitiveness will continue to be a focus for supply chain businesses and the enterprise agencies.
12. This industry is of vital importance to sustaining many remote mainland and island communities across the Highlands and Islands. It provides well paid, year-round employment in dispersed locations, thus helping retain population and key services through both direct and indirect employment.
13. The industry previously experienced a low rate of recruitment and an aging employee demographic. However, following several years of workforce expansion, SSPO research³ has identified that roughly one third of the industry workforce is aged 30 or younger.
14. This trend chimes with the findings of HIE's research⁴ into attitudes and aspirations of young people in the Highlands and Islands (published November 2018) which identified an increased desire by young people to remain in/return to the region to pursue their working career. SAIC and HIE aquaculture skills research⁵ (May 2018) both identified the need and the opportunity for industry to promote employment and career development opportunities in communities where farms are located and where there is often little or no comparable employment on offer.
15. The salmon farming industry has made a strong positive contribution to inclusive growth across Scotland. The following illustrate what we observe across the Highlands and Islands area.
 - a. The sector provides significant year-round employment opportunities across the region, and wages are usually significantly above the national living wage.
 - b. There continues to be ongoing investment in training and skills development, and there are positive career progression opportunities through a range of pathways.
 - c. Employees spend a proportion of their disposable income where they live and work, and this contributes towards sustaining other local businesses and services which the wider community also enjoys.
- d. The industry has made a positive impact on the age demographic in rural communities, affording young people the opportunity to stay in the areas where they grew up and by introducing new families into the area.
- e. Less visibly, individuals employed by the industry and their families make positive contributions to rural communities, for example through participation in vital voluntary services such as the fire and coastguard services.
- f. The development of the salmon farming industry has required investments which also benefit communities:
 - i. Homes and businesses on the remote peninsula of Knoydart and Loch Nevis have benefited from superfast broadband thanks to a collaboration between a salmon farming business and a rural broadband company.
 - ii. On the island of Muck, a salmon farming business invested to build three houses to accommodate workers and their families (boosting the population in the school) and they installed a new pontoon and improved the existing slipway.
 - iii. On Westray, Orkney, a major upgrade of the pier costing £2.8 million will deliver benefits to the fishing industry and the wider community while the economic case was built in large part on use of the harbour by salmon farming business.
 - iv. Salmon producers are investing in other key sectors for growth, such as tourism. A visitor centre is planned alongside the Mowi (formerly Marine Harvest) feed mill on Skye which will add to the current tourism proposition in the region.

³ Scottish Salmon Producers Organisation – Young People in Salmon Farming (<http://scottishsalmon.co.uk/wp-content/uploads/2018/12/Young-people-in-salmon-farming-2018.pdf>)

⁴ HIE – Our Next Generation: <http://www.hie.co.uk/common/handlers/download-document.ashx?id=62d781e5-0495-41b4-ae3d-d981e487bb4f>

⁵ HIE – Skills Review for the Aquaculture Sector <http://www.hie.co.uk/regional-information/economic-reports-and-research/archive/skills-review-for-the-aquaculture-sector-in-scotland.html>

16. There are challenges facing the salmon industry in Scotland in securing its long-term future. We would summarise these as:
- a. Overcoming and eventually anticipating successive biological challenges and evidencing acceptable overall environmental impacts.
 - b. Maintaining competitive advantage in world protein markets.
 - c. Securing future corporate investment ahead of opportunities in other geographies e.g. Chile, Canada.
 - d. Societal acceptance – balancing the broad opportunities for equitable and inclusive growth in (rural) communities through an understanding of the net benefits to the Scottish economy and to consumers of a truly sustainable Scottish salmon farming industry.
 - e. Securing efficient, effective and globally respected regimes for the consenting, monitoring and regulation of the industry in Scotland
17. Conversely, Scotland's aquaculture sector has a more certain future in terms of customer demand and scope to grow than many other sectors in its economy. This confidence relates largely to:
- a. Growing world population alongside rising affluence set against the constraints facing other systems producing high quality animal protein.
 - b. The low carbon footprint of aquaculture compared with other sources of animal protein.
 - c. The opportunity in what is still a young industry to improve performance through innovation, research and development.
18. Collaboration will be key to overcoming challenges and realising opportunities, both strategically and tactically. The formation of an Aquaculture Industry Leadership Group has been a welcome development drawing together industry leaders and senior representatives from regulator and other public sector stakeholders. The Group's collective leadership and vision for the strategic growth of the industry, and their ability to inform and influence sustainable development can only be considered positive. The development of the Strategic Framework for Farmed Fish Health Framework exemplifies this collaborative approach to addressing challenges facing the industry and the many stakeholder interests.
19. Outside of this structure, industry and partners increasingly collaborate on a broad range of activities, aimed to achieve inclusive and sustainable growth. For example:
- a. Individual farmers in Shetland are co-ordinating farm management and treatment plans;
 - b. HIE and Skills Development Scotland commissioned research on aquaculture skills needs and industry is now preparing a skills action plan in conjunction with SDS;
 - c. HIE and Scottish Aquaculture Innovation Centre (SAIC) continue to work closely to stimulate and support near market innovation in indigenous supply chain businesses;
 - d. Scottish Government and partner agencies are arranging a supply chain summit.
20. There is opportunity and ambition to increase the levels of research, development and innovation within businesses and academic centres. Aquaculture research has been undertaken in Scotland for over 40 years (e.g. the world renowned Institute of Aquaculture established in 1971, Scottish Aquaculture Research Forum established 2004). Increasingly, research requires a multidisciplinary approach, blending various expert inputs to deliver the outcomes required by industry. This is evidenced in the establishment of SAIC in 2014 and its programme of collaborative R&D projects. SAIC has established an extensive network covering industry, supply chain businesses and academic and private sector research interests and is on the cusp of securing a second phase of funding to deliver a further series of focused activities in support of the industry's sustainable growth ambitions for Scotland.
21. Recirculation aquaculture systems (RAS)⁶ present both opportunity and threat from Scotland's perspective. An update for HIE by the Institute of Aquaculture in August 2018 of their 2014 report on the commercial viability of RAS indicated that there was still no commercially proven full cycle production of Atlantic salmon. The current commercial opportunities for RAS are in freshwater units producing smolts. Marine Harvest (now Mowi) has established two such units in Scotland and Scottish Sea Farms has recently commissioned its £48 million freshwater RAS unit north of Oban. The industry in Norway and Scotland is also exploring production of post-smolts in sea water RAS. If successful this would enable shorter subsequent periods of on-growing in marine cages. Should full cycle production of salmon in RAS become commercially viable this would be potentially disruptive in terms of the locational advantage Scotland offers the sea cage based industry.

⁶ HIE – Review of Recirculation Aquaculture Systems Technologies (<http://www.hie.co.uk/regional-information/economic-reports-and-research/archive/review-of-recirculation-aquaculture-systems-technologies.html>)

CONCLUSION

- Salmon farming delivers premium quality marine protein in a desirable format.
- This industry is young and will continue to innovate, adapt and evolve over coming years.
- Salmon farming offers significant economic growth which will sustain many remote, island communities as well as providing employment across the rest of Scotland through the associated supply chain.
- Salmon farming provides a foundation on and around which aquaculture in Scotland can diversify and multiply – shellfish, marine fin fish (wrasse, lumpfish but also halibut) and algae (seaweeds).
- To deliver this future Scotland requires a healthy, truly sustainable commercial aquaculture industry built on the underpinning knowledge and expertise of our scientific and engineering communities

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