

Aquaculture



Overview of aquaculture in the Highlands and Islands

The aquaculture industry in the Highlands and Islands has expanded substantially since its inception in the 1960s, and is now entering a maturing phase in a globally competitive market place. The industry is regarded as one of the Primary Sectors producing raw materials which go through various value-adding processes in the Highlands and Islands or beyond. The data in this profile is therefore limited to the cultivation of fish and shellfish, with seafood processing being included in the Food and Drink profile. Aquaculture is an important source of employment in remote rural and coastal areas. The industry is dominated by salmon. Other species of fish grown include rainbow trout, and the developing marine species sector is attracting great interest with rising output of cod and halibut. Shellfish cultivation is expanding steadily with mussels and oysters the main products. Within the overall expanding global market for seafood, factors affecting the sector include environmental and food safety regulations, technological advances and rising consumer demand for farmed fish. There is an ongoing trend of consolidation of the major salmon companies building global concerns, with the potential for job rationalisation in the area. Smaller companies are having to focus on specialist products for niche markets, such as organic or area-specific products.

Employment

- There are 1,325 jobs (1,215 FTEs) in the Highlands and Islands in the production of salmon, salmon smolts and trout (including 1,105 full-time and 220 part-time jobs).¹ This excludes the very significant indirect employment impact throughout businesses in the supply chain to the aquaculture sector. Indirect jobs could amount to as many as 2,100 further jobs in Scotland, the majority of which are in the Highlands and Islands.²
- This represents 95% of Scottish production jobs (1,396 jobs or 1,278 FTEs), the balance comprising employment on rainbow trout farms.
- Farming of other marine species such as cod and halibut also supported 91 jobs (82 FTEs) in the Highlands and Islands in 2005.³
- Shellfish production supports 401 jobs (261 FTEs) in Scotland, of which around 90% (361 jobs, 235 FTEs) are located in the Highlands and Islands. There is a high proportion of part-time employment in this activity.⁴
- In recent years employment has fallen owing to consolidation of companies in the industry. For example, since 2000, employment in Atlantic salmon production has fallen by 30%.⁵ Outsourcing of jobs to external contractors may have contributed to falling direct employment in the sector.

Business units

- In 2005, there were 50 companies involved in Atlantic salmon production, farming 278 active sites, compared with 90 companies in 2000, and 120 in 1995.⁶

¹ Scottish Fish Farms Production Survey 2005

² Based on type 1 employment multiplier for fish farming (2.6) at the Scottish level, Scottish Executive input-output tables 2002

³ Scottish Fish Farms Production Survey 2005

⁴ Scottish Shellfish Farm Production Survey 2005

⁵ Scottish Fish Farms Production Survey 2005

⁶ Scottish Fish Farms Production Survey 2005

- In 2005, there were 41 freshwater salmon production companies in Scotland, with 148 farms in commercial production. This compares to 60 freshwater salmon production companies in 2000.⁷
- Salmon production continues to be concentrated in a small number of international companies.⁸
- Shellfish farming is dominated by small locally based producers in Scotland, although some of the more progressive operators are expanding output through expansion and acquisition to increase their market share.⁹

Output

- Total output from the aquaculture sector in the Highlands and Islands in 2004 was £159m. Gross Value Added (GVA) from aquaculture was £55m in 2004 in the Highlands and Islands, or £39,000 per employee (compared with GVA per employee across all industries in Scotland of £42,200).¹⁰
- After rising steadily since records began in the 1980s, salmon production plateaued at almost 170,000 tonnes in 2003, and has fluctuated since then around this level. Latest figures show salmon production at 129,588 tonnes in 2005, and industry projections for 2006 anticipated a modest rise in production of 6%.¹¹

Product markets

- The value of farmed fish in the Highland and Islands in 2004 was approximately £320m, 95% of the Scottish total, and the value of farmed shellfish was approximately £5.4m, over 90% of the Scottish total.¹²
- The majority of farmed salmon produced in the Highlands and Islands is sold in the UK, and most of it to the grocery retail segment.¹³
- France is the top export destination for salmon from Scotland. Scottish farmed salmon is the first seafood product to be accorded the acclaimed Label Rouge certification. The French market receives around half of all Scottish salmon exports.¹⁴
- While average salmon prices fluctuate, the long-term trend has been downward. However in 2005 and 2006 this trend was dramatically reversed with near record high prices prevailing through much of 2006. Industry observers believe that the sector will operate with a cyclical price pattern due to its lengthy production cycle.¹⁵
- The main shellfish species produced by volume and value are mussels and Pacific oysters. Expansion of mussel production has been stimulated by the success of fresh and processed mussels in UK retail multiples. Other species produced to a smaller but growing extent include native oysters, queens and scallops.¹⁶

Workforce/skills

- The industry is expected to show steady demand for multi-skilled staff who can work across the range of operations involved in fish and shellfish production.
- Hygiene and disease control is an important skill, with a need for greater scientific, husbandry, and health and safety skills, including e.g. operating Hazard Analysis Critical Control Points (HACCP).¹⁷
- Business, general management, information and communications technology, production technology and mechanisation/engineering skills are required throughout the industry.
- Trade organisations are now working to promote career progression in the industry.

⁷ Scottish Fish Farms Production Survey 2005

⁸ HIE Network 2007

⁹ Scottish Shellfish Farm Production Survey 2005

¹⁰ ABI/2 Scottish Executive 2006 (excluding self-employed)

¹¹ Scottish Fish Farms Production Survey 2005

¹² SEERAD / HIE Network 2007

¹³ Review of current trends in the Scottish salmon farming industry (Ernst & Young, 2005)

¹⁴ Scottish Salmon Producers Organisation 2006

¹⁵ HIE Network 2007

¹⁶ Scottish Shellfish Farm Production Survey 2005

¹⁷ Lantra Sector Skills agreement stages 1-3 report, Highlands and Islands regional consultation document, December 2005

SWOT analysis

The following analysis illustrates the main issues facing the development of the aquaculture sector in the Highlands and Islands.

Strengths

- Scotland is a major salmon farming nation, third in scale behind Chile and Norway
- The Highlands and Islands coastline is well suited to the current generation of aquaculture technologies
- High-quality environmental resource
- Access to European Union markets compared to main competitors
- High-quality science base in Scottish institutions

Weaknesses

- Industry domination by a single species
- Ownership of industry in Scotland increasingly lies overseas, with Norwegian and Dutch companies
- Reliance on industrial fishing to provide fish meal and oil for fin fish feeds
- On-farm employment is declining despite salmon expansion
- Operating in a high-quality environment places a burden of responsibility on operators

Opportunities

- Global demand for seafood continues to grow while fishery yields are static or declining
- Potential to diversify the industry through farming species such as cod and halibut, shellfish, seaweeds etc
- Consumer demand for high-quality foods, organic and regionally branded products gives smaller companies scope to develop potentially lucrative niche markets
- Demonstration of sustainable practices, reducing the impact of industry critics

Threats

- Departure of global salmon businesses to regions with lower production costs
- Control of commodity market for salmon lies with Chile and Norway
- Climatic changes leading to decline of coastal water quality
- Low uptake of accredited training courses may affect sustainability of such courses
- Salmon farming is poorly understood by the public and is particularly vulnerable to consumer food safety 'scares'

Priorities for action for food and primary industries

- Improve the rate of collaboration between businesses in the food and primary industries.
- Encourage industry and business communication as well as external communication to showcase the provenance and quality of products locally and globally.
- Ensure the necessary infrastructure is in place for the industry, including distribution networks within and outside the Highlands and Islands.
- Focus on “keeping value” within the Highlands and Islands.
- Facilitate better business leadership within the sector, particularly within small and medium businesses.
- Development of skills initiatives driven from the industry.
- Identify ways to support businesses that are committed to sustainable practices and local sourcing.