The Tasmanian Salmon Industry

May 2009

Marine farming of salmonids, primarily Atlantic salmon and rainbow trout, has expanded rapidly in Tasmania since farming commenced in the mid-1980s. Tasmania's salmon is considered to be among the world's best quality and is available year round.

Salmonid farming is now a major industry in the State. Other secondary industries, such as developing farm management and fish feeding systems, have also emerged as a result of marine farming, creating additional economic and employment opportunities.

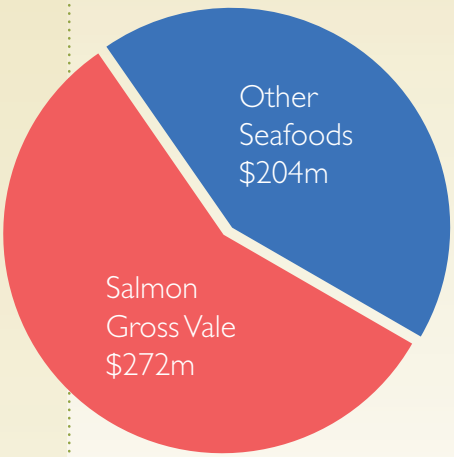
Tasmania's environmental conditions are ideal for salmonid farming and the state industry supplies most of its product to the domestic market. In 2005-06, farmed salmonids overtook tuna as Australia's most valuable commercial finfish species. In 2006-07 salmonids ranked second in the top five fisheries by volume and value, accounting for 11 per cent of total fisheries production in Australia. [1]

There are five companies engaged in salmonid farming in Tasmanian waters. Most farming activity is concentrated in the D'Entrecasteaux Channel and Huon River in the State's south. Sea-based grow-out operations are also situated in the waters around the Tasman Peninsula, in Macquarie Harbour, and the Tamar River.

The State's island advantage helps producers maintain a relatively pest and disease free status. This allows trade in markets that are closed to others, reduces production costs, and identifies the State as a quality producer. This advantage is enhanced by the Tasmanian Biosecurity Policy which relies on science-based assessment to manage risk and protect and enhance the State's primary industries. Strict quarantine controls on the importation of salmonid products have protected the industry from many of the serious diseases that affect salmon production in other countries.

[1] ABARE Australian Fisheries Statistics 2007

Value of Salmon in Tasmania 2006-07



Salmon accounted for 57% of total seafood production in 2006-07.

Source: *ABARE Australian Fisheries Statistics 2007*

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Key Markets and Exports

Nearly 93 per cent of Tasmanian salmonid production was sold in the domestic market in 2006-07[2]. Interstate sales of salmon account for 85 per cent of Tasmanian salmon production, and local sales account for 8 per cent. The chart below demonstrates how important interstate markets are, with sales generating more than $300 million revenue in 2006-07.

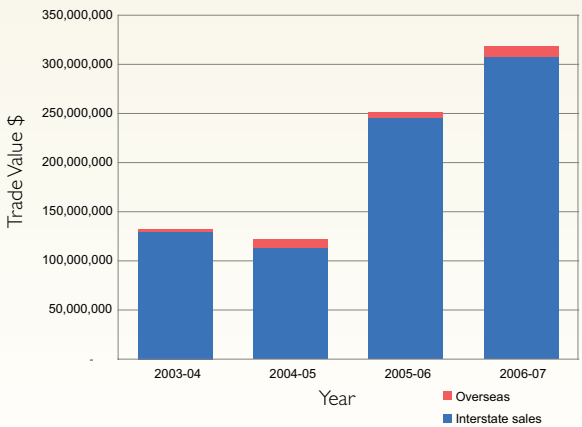
A significant factor contributing to rapid growth in domestic markets has been the focus on promoting and marketing salmon to Australian consumers. The high quality of Tasmanian salmon has been a key factor in establishing a strong domestic market. Projected sales data for 2005-06 to 2006-07 demonstrate the success of the marketing program and the impact it has had on Tasmanian salmonid production and revenue.

Around 7 per cent of salmon is exported to overseas countries. Apart from confectionery, salmon is now Tasmania's largest food trade item. Domestic consumption of salmon within Tasmania accounts for some 8 per cent of production. Tasmania's high quality product has also found niche markets overseas, with fish currently being exported to Japan, USA, Hong Kong and Singapore. Other export markets include Thailand, Indonesia, China, Taiwan, Singapore, Vietnam, Guam, Malaysia, the Philippines and India[3].

Interstate markets are by far the dominant outlet accounting for 85% of salmon produced and the value of interstate sales has increased markedly in recent years. Less than 5% of salmon is exported to overseas countries. Aside from confectionery, salmon is now Tasmania's largest food trade item

[2]DPIW Food Industry Scorecard
[3]Tasmanian Salmonid Growers Association (2007)
[4]ABARE Australian Fisheries Statistics 2007
[5]CSIRO - Breeding Better Salmon: www.csiro.au/science/ps20x.html

Interstate and Overseas Salmon Exports



Source: *DPIW Food Industry Scorecard*

Trade and Investment Opportunities

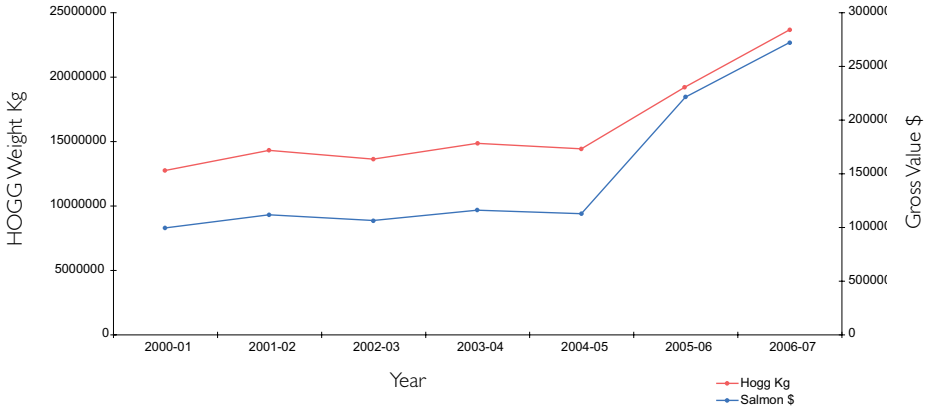
The outlook for the Tasmanian salmonid industry is positive. Production is forecast to rise, reflecting the increases experienced over the past decade. Over the five years to 2006-07, the State's aquaculture sector has approximately doubled in value in real terms. The 65 per cent growth in volume of salmonid production and a 28 per cent increase in salmon price contributed to that success. The volume of farmed salmonid harvested in 2006-07 was 23,637 tonnes with a value of $272 million, accounting for 57% of the state's gross value of production.[4] In the 2007/08 period, the value of farmed salmonid rose to $291 million.

Several factors point towards continued growth. Prices of all categories of seafoods have risen steadily in the domestic market. Growth exceeding 15 per cent per annum has been experienced in the domestic market over the past two years and this is anticipated to continue for the next three years. Industry has made significant investment in hatchery capacity, land-based infrastructure and deep water farm systems to enable it to meet predicted increasing market growth.

CSIRO's Food Futures Flagship program is working with Tasmanian salmonid growers to improve the health, growth and quality of Atlantic salmon. The research partnership is developing a selective breeding program that will deliver tens of thousands of pedigreed Atlantic salmon with performance records and estimates of genetic values for key commercial traits. In addition, systems for capturing, storing and processing hundreds of thousands of performance measurements will be developed along with workplans, tools and protocols for tagging, genotyping and performance measurement.[5]

The Tasmanian Government supports sustainable industry growth, and the statutory planning provisions of the *Marine Farming Planning Act 1995* provide a framework for the orderly development of the industry through the growth phase..

Salmon Production



Salmon production has increased sharply over the last two years. At the same time prices have increased and the net result is that the total value of production has increased by 130% since 2004-05. Such increases in production are rarely seen in primary industries

Source: *ABARE Australian Fisheries Statistics 2007*

Trends and Development

A consolidation of companies engaged in salmonid farming has improved efficiencies in production through economies of scale, cost savings and application of technology. Meanwhile, developments in salmonid husbandry techniques have resulted in increases in the average harvest weight of fish.

The CSIRO's Atlantic salmon research projects are developing:

- a commercial breeding program for Tasmania's valuable salmon industry, (with improvements of up to 10 per cent per generation a possibility for key commercial traits);
- an experimental DNA vaccine to counter amoebic gill disease; and
- knowledge and methods for better selection for disease resistance and product quality.

Concerns have been raised about the impact gene technology may have on the environment, health and safety of Tasmanians, and our international reputation as a producer of quality products. There has been a moratorium on the commercial release of GMOs in Tasmania since 2001 in order to preserve marketing opportunities for the State. The moratorium will remain in place until November 2014.

Challenges

Like the rest of Australia, the Tasmanian primary industry sector faces both recruitment and demographic challenges. These challenges need to be met through attracting new workforce participants and providing education and training for the existing workforce. Input costs have also risen sharply over the last few years and this has had a significant impact on the cost of production for the sector.

Other challenges include:

- Development of open ocean production areas and husbandry techniques;
- Ensuring achievement of high level environmental and quality assurance programs to maximise marketability of products and demonstrate industry sustainability; and
- Managing fish health issues and predation by seals and improving selective breeding to enhance production efficiency, reduce costs and improve environmental outcomes.

The Tasmanian salmonid industry may be affected by the impacts of climate change. To help manage this risk, the industry conducted a study in 2008. The study shows that species improvement and production system development will provide climate change adaptation opportunities.

Research, Development & Extension

A factor behind the salmonid farming sector's strong growth is the role of research and development which has enabled the industry to adopt better feeding techniques and implement improved disease control measures. The Tasmanian Government contributes financially to salmonid research undertaken by the Commonwealth Fisheries Research and Development Corporation (FRDC).

The State Government was actively involved in establishing the salmonid industry in Tasmania and continues to support industry research through the Tasmanian Aquaculture and Fisheries Institute (TAFI), a joint venture between the State Government and the University of Tasmania. Recent TAFI research includes a scoping study into adaptation of the Tasmanian salmonid industry to the potential impacts of climate change, as well as research into nutritional physiology, endocrine physiology, fish health and feeding activity.

The CSIRO's selective breeding program, which is part of the Food Futures Flagship, is using targeted matings to concentrate the following key performance traits in Tasmania's Atlantic salmon stocks – growth, maturation, resistance to amoebic gill disease, and carcase quality. The three year breeding and selection cycle includes spawning, tagging and DNA fingerprinting, monitoring procedures in fresh water and seawater, and parent selection.

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