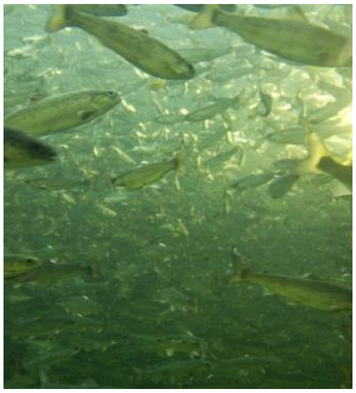
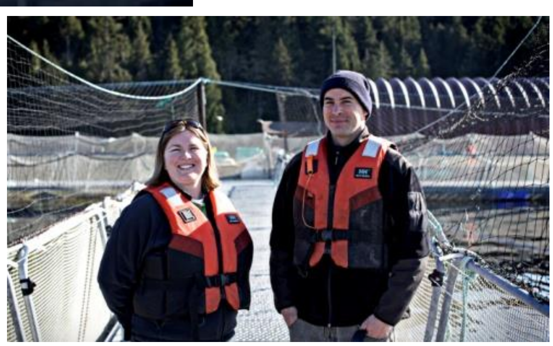




BC Salmon Farmers Association

ECONOMIC IMPACT STUDY OF THE BC FARM-RAISED SALMON INDUSTRY

February 2015


Prepared by: MNP LLP

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EXECUTIVE SUMMARY

Background

The BC Salmon Farmers Association (BCSFA) is the industry association that represents the BC farm-raised salmon industry, and is currently comprised of 39 member organizations.

MNP was engaged by the BCSFA to conduct a study of the economic impacts and social contributions of the BC farm-raised salmon industry. The study involved the collection of publicly available statistics, articles and reports, as well as the collection of information from an online survey of the members of the BCSFA.

Production

The total production of farm-raised salmon in BC in 2013 was estimated at about 75,000 metric tonnes.[1] Based on the survey of the members of the BCSFA, MNP estimates that members accounted for a total of 71,500 metric tonnes of farm-raised salmon, or about 95 percent of all farm-raised salmon production in BC in 2013.

Economic Impacts

The operations of the farm-raised salmon industry impact the BC economy through expenditures on goods and services (such as feed, equipment, transportation and veterinary services), the employment of staff and the generation of tax revenues for local, provincial and federal governments. As indicated in the following table, the 2013 operations of the farm-raised salmon industry are estimated to have generated approximately $411.5 million in GDP, 4,977 full-time equivalent positions and $62.0 million in tax revenues for the federal, provincial and municipal governments.

Economic Impacts of the Farm-Raised Salmon Industry in BC in 2013

Impacts	Output (millions)	GDP (millions)	Employment (FTEs)	Federal Tax (millions)	Provincial Tax (millions)	Municipal Tax (millions)
Direct	$ 594.5	$ 186.6	2,362	$ 18.5	$ 10.3	$ 0.8
Indirect	$ 443.7	$ 157.3	1,926	$ 13.9	$ 10.2	$ 0.6
Induced	$ 105.8	$ 67.6	689	$ 3.4	$ 3.6	$ 0.7
Total	$ 1,144.0	$ 411.5	4,977	$ 35.8	$ 24.1	$ 2.1

Source: MNP Estimates

Approximately 40 percent of GDP, employment and tax revenues are attributable to activities that occur on North Vancouver Island, while 35 percent are estimated to be attributable to activities that occur on the Lower Mainland. The remaining GDP, employment and tax revenue impacts are estimated to be attributable to activities that take place on the West Vancouver Island (12 percent), East Vancouver Island (6 percent), Central Coast (5 percent), and South Vancouver Island (2 percent).

Other Social and Community Contributions

In addition to economic impacts, the farm-raised salmon industry makes social and community contributions in the communities in which it operates. According to the survey conducted by MNP, the farm-raised salmon industry contributed donations to local charities and community organizations, developed partnerships with research and educational institutions, formed partnerships with First Nations, and contributed to local environmental and fish enhancement initiatives. It is estimated that over $600,000 was provided for community organizations and causes by the members of the BCSFA in 2013.

[1] Fisheries and Oceans Canada, "Aquaculture Production Quantities and Values," available here: http://www.dfo-mpo.gc.ca/stats/aqua/aqua-prod-eng.htm

1. INTRODUCTION

1.1 BACKGROUND AND STUDY PURPOSE

The BC Salmon Farmers Association (BCSFA) commissioned MNP's Economics and Research Group (MNP) to carry out an economic and social impact assessment of the BC farm-raised salmon industry.

The scope of the study included:

- Industry overview of the BC aquaculture industry and the members of the BCSFA.
- Quantification of the economic impacts generated by the BC farm-raised salmon industry in terms of output, GDP, employment and tax revenues.
- A description of the social and community benefits arising from the members of the BCSFA.

1.2 INDUSTRY DEFINITION

For the purpose of this report, the BC farm-raised salmon industry (the "industry") is defined to include establishments involved with the production and initial processing (e.g. dressing) of farm-raised salmon in BC.

1.3 APPROACH

In preparing the report, MNP carried out the following activities:

- Conducted research through publicly available statistics, articles and reports.
- Conducted an online survey of the members of the BCSFA to gather financial and operating information required for the study.
- Collected existing industry data from the BC Ministry of Agriculture, Fisheries and Oceans Canada, Statistics Canada, BC Stats and Industry Canada.
- Developed an economic impact model using the data collected through primary and secondary research to estimate the economic impacts generated by the members of the BCSFA.
- Compared the economic impacts of the farm-raised salmon industry with other industries.
- Summarized other social and community contributions of the members of the BCSFA based on primary and secondary research findings.

1.4 LEGAL MATTERS

This report is provided for information purposes and is intended for general guidance only. It should not be regarded as comprehensive or a substitute for personalized, professional, investment or business advice.

MNP has relied upon the completeness, accuracy and fair presentation of all information and data obtained from the BCSFA, surveys of individual members of the BCSFA and public sources, believed to be reliable. The accuracy and reliability of the findings and opinions expressed in the presentation are conditional upon the completeness, accuracy and fair presentation of the information underlying them. As a result, MNP cautions readers not to rely upon any findings or opinions expressed as accurate or complete, and disclaim any liability to any party who relies upon them for business or investment purposes.

Additionally, the findings and opinions expressed in the presentation constitute judgments as of the date of the presentation, and are subject to change without notice. MNP is under no obligation to advise of any change brought to its attention which would alter those findings or opinions.

2. INDUSTRY OVERVIEW

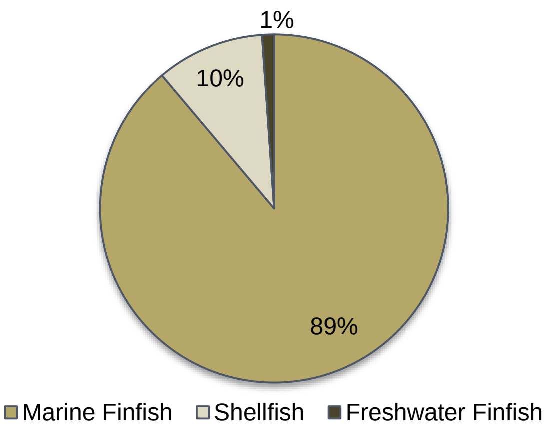
2.1 BC AQUACULTURE INDUSTRY

The BC aquaculture industry is defined to include establishments primarily engaged in farm-raising aquatic animals. According to Fisheries and Oceans Canada (DFO),[2] the aquaculture industry is split into three distinct areas:

- Marine finfish, which includes fish and other non-shellfish raised in a saltwater environment. In BC, nearly all marine finfish farms are salmon farms.
- Freshwater finfish, which includes fish and other non-shellfish raised in a freshwater environment. Freshwater finfish largely includes steelhead salmon and trout.
- Shellfish, which includes non-fish, such as clams, oysters, mussels and scallops.

The 2013 distribution of aquaculture production in BC by weight is presented in Figure 1.[3]

Figure 1: BC Aquaculture Production by Weight in 2013



Source: DFO

DFO is the lead government agency in ensuring that aquaculture is managed sustainably in BC.[4] DFO licences aquaculture facilities as well as invests in research and supports industry innovation and development.[5] In BC, there are currently 115 valid marine finfish aquaculture facilities registered with DFO.[6]

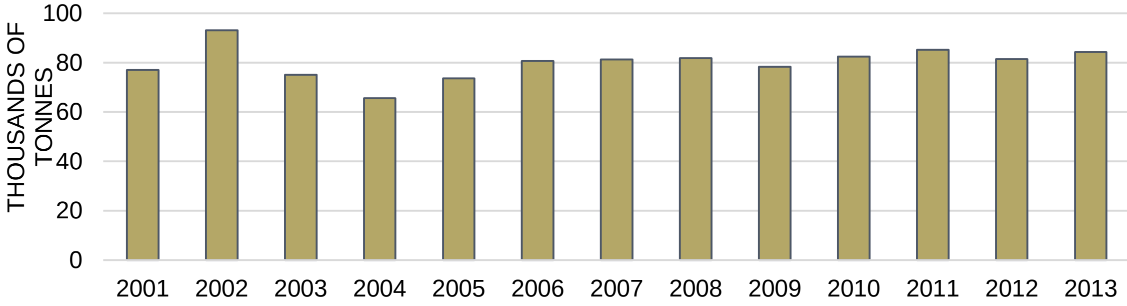
In 2013, total aquaculture production in BC was estimated at 84,000 tonnes which represented a wholesale value of over $655 million.[7] Out of the total aquaculture production in 2013, 89 percent, or about 75,000

[2] Fisheries and Oceans Canada, "Aquaculture in British Columbia." 2011. Available from: http://www.pac.dfo-mpo.gc.ca/publications/pdfs/aqua_mgmt-gest_aqua-eng.pdf
[3] Fisheries and Oceans Canada, "Aquaculture Production Quantities and Values." 2013 values provided through request and are preliminary data. Historical data available here: http://www.dfo-mpo.gc.ca/stats/aqua/aqua-prod-eng.htm
[4] Fisheries and Oceans Canada, "Roles and Responsibilities." Available here: http://www.dfo-mpo.gc.ca/aquaculture/management-gestion/roles-eng.htm
[5] Fisheries and Oceans Canada, "Roles and Responsibilities." Available here: http://www.dfo-mpo.gc.ca/aquaculture/management-gestion/roles-eng.htm
[6] Fisheries and Oceans Canada, "Finfish Aquaculture Licensing in BC." Current as of July 24, 2014. Available from: http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/mar-eng.html
[7] Fisheries and Oceans Canada, "Aquaculture Production Quantities and Values." 2013 values provided through request and are preliminary data. Historical data available here: http://www.dfo-mpo.gc.ca/stats/aqua/aqua-prod-eng.htm

tonnes, was farm-raised salmon.[8] In addition, BC accounted for approximately half of all aquaculture production in Canada in 2013, and about 75 percent of all farm-raised salmon production.[9]

Figure 2 summarizes the historical aquaculture production in BC. As indicated below, production has not changed significantly over the last 13 years.

Figure 2: Total Aquaculture Production in BC



Source: DFO

2.2 MEMBERS OF THE BCSFA

The BCSFA is the industry association that represents the farm-raised salmon industry in BC. The BCSFA's purpose and activities include:[10]

- Providing a forum for communication and cooperation within the farm-raised salmon industry.
- Acting as the focal point for liaison between the industry and government.
- Providing information to the public and stakeholders about salmon farming.
- Coordinating industry-wide activities, research and community events.

The members of the BCSFA include both farm-raised salmon producers, and many of the organizations that provide services and supplies to them. The BCSFA currently comprises 39 members in BC, encompassing three categories of membership:[11]

- Producing Members, which are marine and freshwater finfish operators that produce farm-raised salmon. The BCSFA is estimated to represent over 90 percent of salmon farming facilities in BC.
- Associate Members, which are individuals and organizations that derive a substantial portion of their income from the aquaculture industry, including salmon farming.
- Sustaining Members, which include individuals and organizations that derive a portion of their income from, or focus an element of their activities, on the aquaculture industry, including salmon farming.

The distribution of member by category is shown in Table 1.

Table 1: BCSFA Membership by Type

Category	Number of Members
Producing Members	*5*
Associate Members	*17*
Sustaining Members	*17*
Total	***39***

Source: BCSFA

[8] Fisheries and Oceans Canada, "Aquaculture Production Quantities and Values." Available here: http://www.dfo-mpo.gc.ca/stats/aqua/aqua-prod-eng.htm
[9] BC Ministry of Agriculture, "2012 British Columbia Seafood Industry Year in Review," 2012. Available here: http://www.agf.gov.bc.ca/stats/YinReview/Seafood-YIR-2012.pdf
[10] BC Salmon Farmers Association, "About Us." Available here: http://www.salmonfarmers.org/about-us
[11] BC Salmon Farmers Association, "Our Members." Available here: http://www.salmonfarmers.org/our-members-1

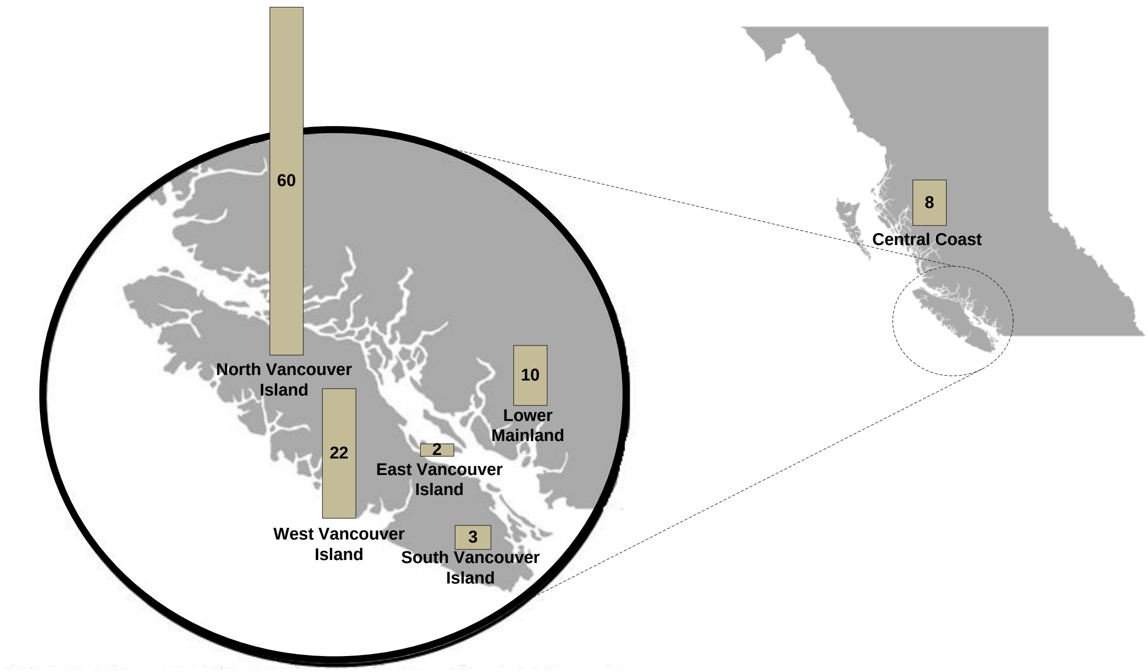
Facilities and Production

According to survey responses, the Producing Members of the BCSFA operate an estimated 105 of the 115 licenced finfish aquaculture facilities across the coastal regions of BC. The coastal regions of BC are defined as:

- North Vancouver Island, including Strathcona and Mount Waddington Regional Districts.
- West Vancouver Island, including Alberni-Clayoquot Regional District.
- Lower Mainland, including Metro Vancouver, Sunshine Coast and Powell River Regional Districts.
- Central Coast, including Central Coast and Kitimat-Stikine Regional Districts.
- South Vancouver Island, including Cowichan and Capital Regional Districts.
- East Vancouver Island, including Comox Valley and Nanaimo Regional Districts.

Sixty facilities are located on North Vancouver Island, with another 22 facilities located on West Vancouver Island. The geographic distribution of salmon farming facilities is illustrated in Figure 3.

Figure 3: Salmon Farming Facilities in BC in 2013 by Geographic Area



Case Study: Community Support and Environmental Initiatives

BCSFA member, Cermaq, and the Ahousaht First Nation are working together to rebuild a salmon habitat by restoring Atleo River in Clayoquot Sound. The Atleo River was severely impacted by logging and commercial fishing over the years which in turn reduced the salmon runs dramatically. Cermaq Canada and Ahousaht have a protocol agreement, which ensures both parties receive fair compensation for salmon farming in Ahousaht territory.

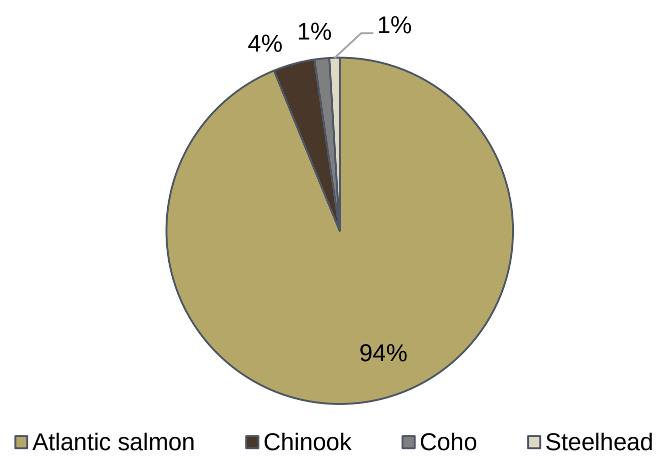
The work that Cermaq and Ahousaht First Nation are embarking upon together to restore Atleo River is indicative of the responsibility the salmon aquaculture industry takes for the people, communities and environment affected by its business.

Source: BCSFA

Based on the survey responses, the 2013 production of farm-raised salmon by members of the BCSFA is estimated at 71,500 metric tonnes. This suggests that members of the BCSFA accounted for approximately 95 percent of all farm-raised salmon production in BC in 2013.[12]

According to the survey responses, Atlantic salmon is the most widely produced species by members of the BCSFA (94 percent), with Chinook, Coho and Steelhead accounting for the remainder. The distribution of farm-raised salmon production by species is shown in Figure 4.

Figure 4: Distribution of Farm-Raised Salmon Production Weight by Species in 2013

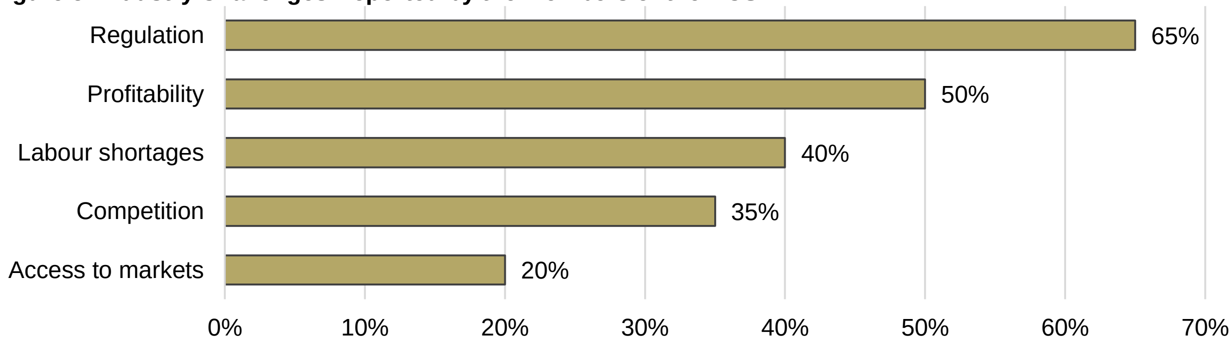


Source: Member Survey

Challenges Facing the Industry

According to survey responses, regulation and profitability were reported by members of the BCSFA as being the two greatest challenges facing the industry. Access to markets was reported as being the least challenging area. The challenges reported by the members of the BCSFA are shown in Figure 5.

Figure 5: Industry Challenges Reported by the Members of the BCSFA



Source: Member Survey

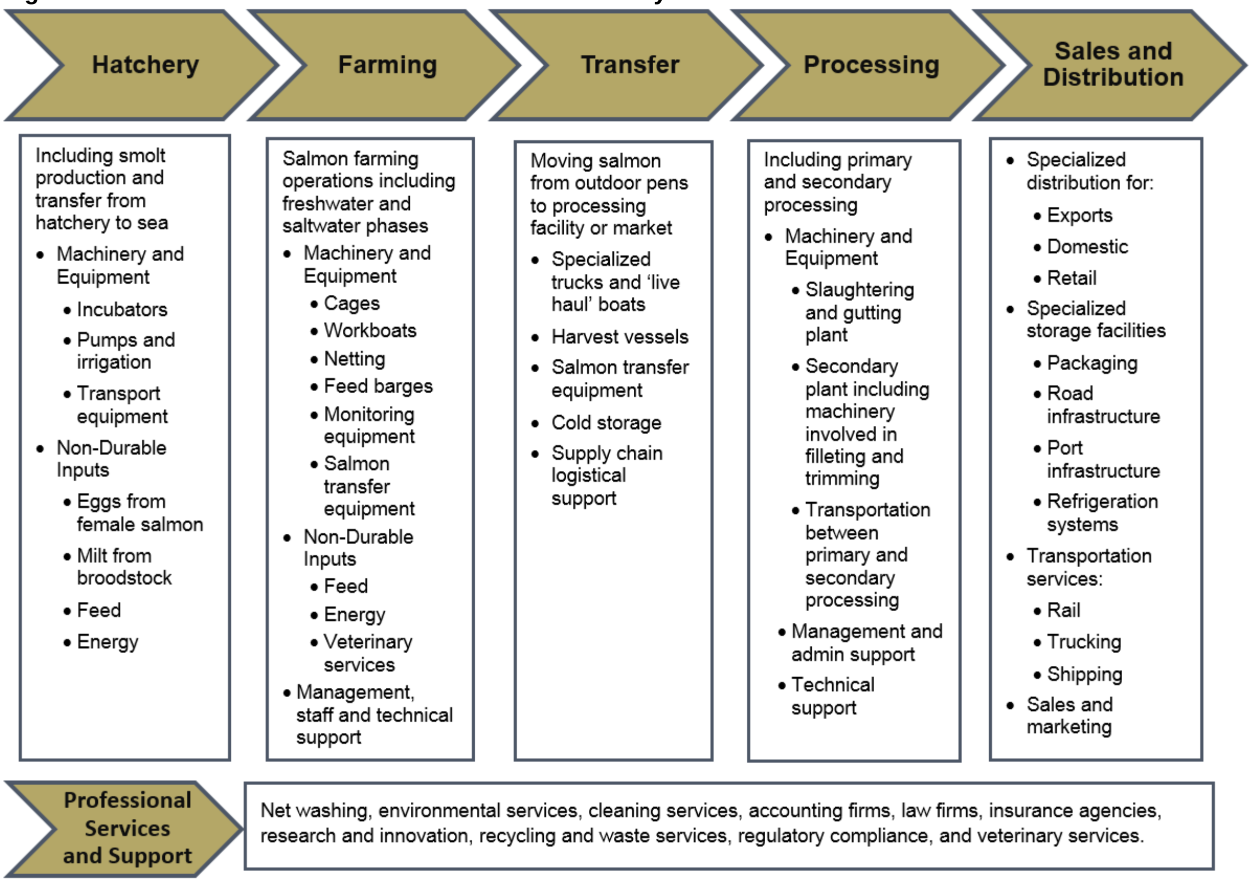
[12] Fisheries and Oceans Canada, "Aquaculture Production Quantities and Values." 2013 values provided through request and are preliminary data. Historical data available here: http://www.dfo-mpo.gc.ca/stats/aqua/aqua-prod-eng.htm. This calculation is based on survey data as well as data from DFO.

Linkages with Other Businesses

The economic activity created by the farm-raised salmon industry can be described in terms of the industry "value chain". A value chain illustrates the cycle of activities for a firm or specific industry.

The value chain in Figure 6 illustrates how other businesses are impacted by the purchases of goods and services by salmon farmers. It illustrates that while economic activity is created from the operations of the salmon farmers, indirect and induced impacts arise from the linkages that exist with suppliers and other sectors.

Figure 6: Value Chain of the Farm-Raised Salmon Industry



Case Study: Skills Training

In 2012, Trevor Fraser was living in the small community of Tsaxana, near Gold River, when he set his sights on a career in aquaculture. He signed up for the Aquaculture Technician Diploma Program being offered in his home community by Excel Career College. The college was working in partnership with the Mowachaht/Muchalaht First Nation, Grieg Seafood and the BC Government's Aboriginal Training for Employment Program.

Trevor landed a practicum placement with Grieg Seafood during the program where his commitment and hard work was evident. Following the practicum, Grieg offered him a contract and then a permanent, full-time position. In addition to Excel Career College, aquaculture programs are offered at Vancouver Island University, North Island College and UBC's Faculty of Land and Food Systems. Trevor's success is just one example of the thousands of stable, year-round jobs the province's aquaculture industry offers in coastal communities throughout BC.

Source: BCSFA

3. ECONOMIC IMPACT ANALYSIS

3.1 ECONOMIC IMPACT ANALYSIS METHODOLOGY

In general, economic impacts are viewed as being restricted to quantitative, well-established measures of economic activity. The most commonly used of these measures are output, GDP, employment and government tax revenue:

- Output is the total gross value of goods and services produced by a given company or industry measured by the price paid to the producer. This is the broadest measure of economic activity.
- Gross Domestic Product (GDP), or value added, refers to the additional value of a good or service over the cost of inputs used to produce it from the previous stage of production. Thus GDP is the incremental value created through labour or mechanical processing. GDP is a more meaningful measure of economic impact, as it avoids double counting during each round of impacts.
- Employment is the number of additional jobs created. Employment is measured in terms of full-time equivalents (FTEs).
- Government Tax Revenues arise from personal income taxes, indirect taxes less subsidies, corporate income taxes and some natural resource royalties. Note that government tax revenue would not include revenue from site tenure rentals.

Data for the economic impact modelling were obtained from Statistics Canada, DFO, BC Stats and from a survey of the members of the BCSFA. MNP based its economic impact methodology on BC Stats' recommended approach to modelling the economic impacts of the aquaculture industry in BC,[13] as well as the approach used in a report for DFO.[14]

The approach followed by MNP employs an input-output model using economic impact multipliers. Input-output modeling is a widely used and widely-accepted approach, making it recognizable by many different stakeholders and audiences. A detailed description of MNP's economic impact methodology and assumptions is provided in Appendix A.

3.2 SOURCES OF ECONOMIC IMPACT

Economic impacts may be estimated at the direct, indirect and induced levels:

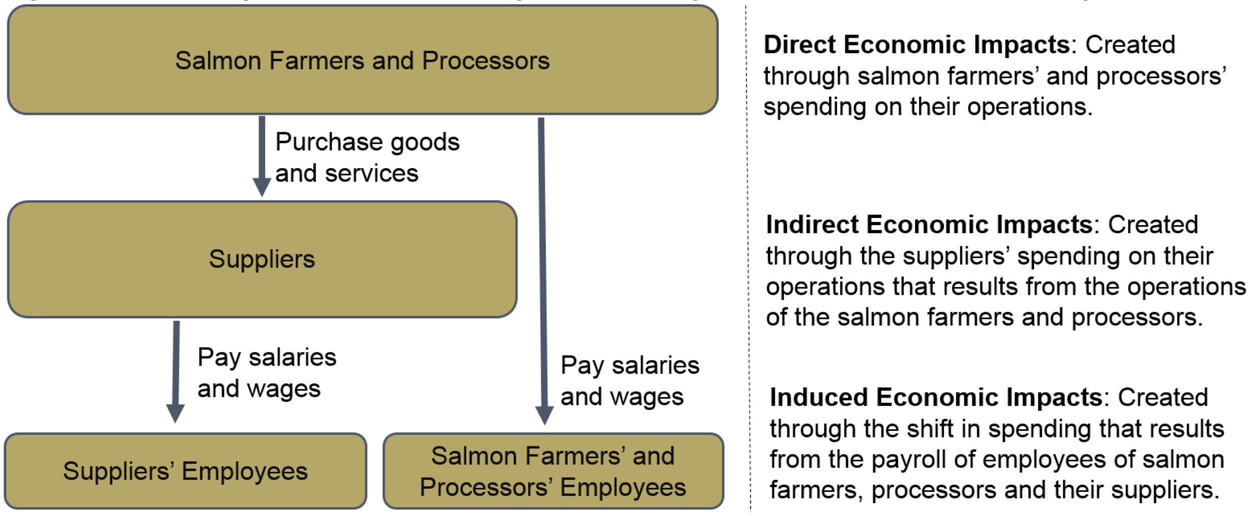
- Direct impacts are changes that occur in front-end businesses that would receive revenue and incur expenditures as a direct consequence of the production and processing of farm-raised salmon.
- Indirect impacts arise from changes in activity for suppliers of the front-end businesses.
- Induced impacts arise from the shifts in spending on goods and services as a consequence of the payroll of the directly and indirectly affected businesses.

Figure 7 summarizes the relationship between the levels of economic impacts created by the farm-raised salmon industry.

[13] BC Stats, "British Columbia's Fishers and Aquaculture Sector, 2012 Edition," 2013. Available here: http://www.salmonfarmers.org/sites/default/files/british_columbias_fisheries_and_aquaculture_sector_2012_edition.pdf

[14] Gardiner Pinfold, "Socio-Economic Impacts of Aquaculture in Canada: 2013 Edition," prepared for Fisheries and Oceans Canada Aquaculture Management Directorate, February 2013.

Figure 7: Relationship between Economic Impacts created by the Farm-Raised Salmon Industry



3.3 ECONOMIC IMPACTS ARISING FROM THE FARM-RAISED SALMON INDUSTRY IN BC

The operations of the farm-raised salmon industry impact the BC economy through expenditures on goods and services (e.g. operating supplies and professional services), the employment of staff and the generation of tax revenues for local, provincial and federal governments.

Spending by the producers and processors of farm-raised salmon create economic impacts throughout the BC economy through the linkages that exist between the production and processing facilities and other industry sectors. Inputs used by the industry, such as feed, equipment, transportation, veterinary services, and smolts, are provided by suppliers across the province.

In 2013, the total wholesale value of farm-raised salmon in BC was estimated at $594.5 million.[15] The wholesale value of farm-raised salmon represents the production value of the product (also known as the farm-gate value), as well as the initial processing value-add that prepares the product for market. The total aquaculture production value in BC in 2013 was estimated at $480.4 million.[16] As such, the processing output for farm-raised salmon in 2013 is estimated at $114.1 million. This is summarized in Table 2.

Table 2: BC Farm-Raised Salmon Output, 2013

Category of Output	Value (millions)
Production Value	$ 480.4
Processing Value-Add	$ 114.1
Total Wholesale Value	**$ 594.5**

Source: BC Ministry of Agriculture, DFO

The economic impacts presented in Table 3 are generated from the operations of the farm-raised salmon industry in BC. In 2013, the industry is estimated to have contributed $411.5 million in GDP, supported

[15] BC Ministry of Agriculture, "Cultured Salmon Wholesale Value," 2013, available here: http://www.agf.gov.bc.ca/stats/YinReview/Seafood-YIR-2013.pdf.
[16] Fisheries and Oceans Canada, "Aquaculture Production Value," available here: http:///www.dfo-mpo.gc.ca/stats/aqua/aqua13-eng.htm

4,977 full-time equivalent positions, and generated $62.0 million in tax revenue for the federal, provincial and municipal governments.

Table 3: Economic Impacts of the Farm-Raised Salmon Industry

Impacts	Output (millions)	GDP (millions)	Employment (FTEs)	Federal Tax (millions)	Provincial Tax (millions)	Municipal Tax (millions)
Direct	$ 594.5	$ 186.6	2,362	$ 18.5	$ 10.3	$ 0.8
Indirect	$ 443.7	$ 157.3	1,926	$ 13.9	$ 10.2	$ 0.6
Induced	$ 105.8	$ 67.6	689	$ 3.4	$ 3.6	$ 0.7
Total	$ 1,144.0	$ 411.5	4,977	$ 35.8	$ 24.1	$ 2.1

3.4 REGIONAL DISTRIBUTION OF ECONOMIC IMPACTS

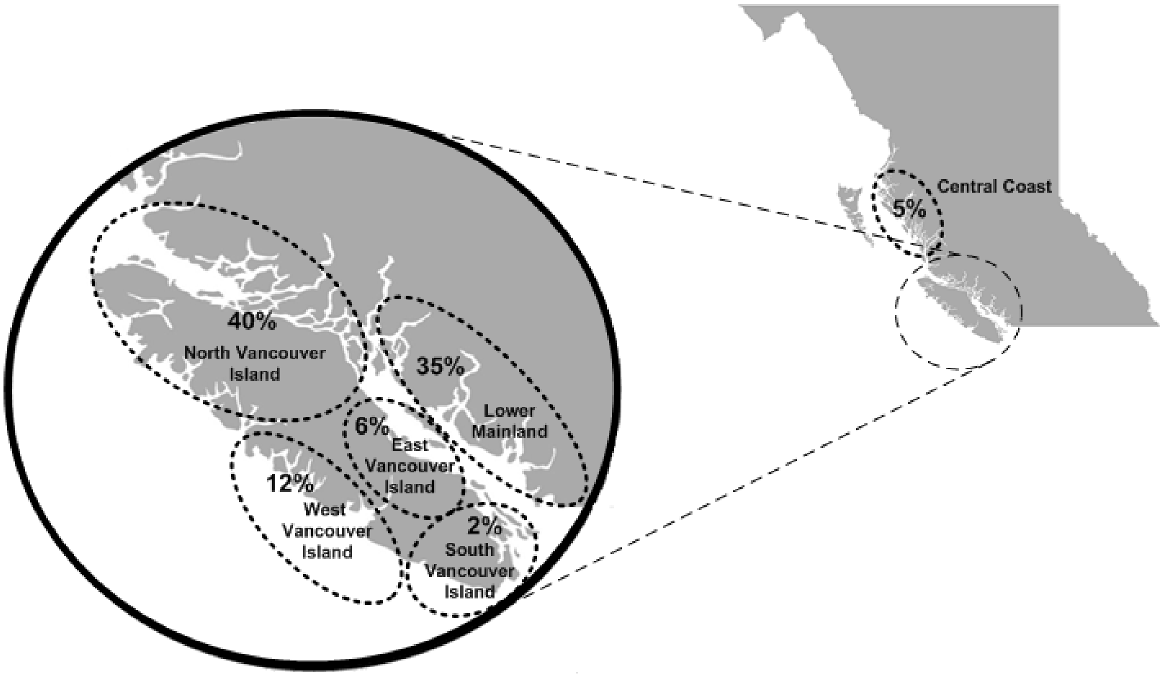
The economic impacts attributable to the farm-raised salmon industry arise throughout the coastal regions of the province. MNP estimated the share of impacts in each coastal region using revenue and location data from the survey of the members of the BCSFA (please see Appendix A for more information). Note that economic impact multipliers are produced at the provincial level, and do not distinguish between the regional source of the impacts. The regional distribution of economic impacts is therefore an approximation using the best available information.

Table 4 and Figure 8 presents the economic impacts of the industry that are estimated to be attributable to each coastal region of the province. Approximately 40 percent of GDP, employment and tax revenue are attributable to activities that occur on North Vancouver Island, 35 percent within the Lower Mainland, 12 percent on West Vancouver Island, six percent on East Vancouver Island, five percent on the Central Coast, and the remainder on South Vancouver Island (about 2 percent).

Table 4: Estimated Regional Economic Impacts Generated by the Farm-Raised Salmon Industry

Region	North Vancouver Island	Lower Mainland	West Vancouver Island	East Vancouver Island	Central Coast	South Vancouver Island
Share of Impacts	40%	35%	12%	6%	5%	2%
Total GDP Attributable (millions)	$ 164.7	$ 145.4	$ 49.2	$ 23.6	$ 20.6	$ 8.0
Employment Attributable (FTEs)	1,993	1,758	595	286	248	97
Total Tax Attributable (millions)	$ 24.8	$ 21.9	$ 7.4	$ 3.6	$ 3.1	$ 1.2

Figure 8: Estimated Regional Attribution of Economic Impacts Generated by the Farm-Raised Salmon Industry



It is worth noting that the farm-raised salmon industry has the majority of its operations in rural areas of Vancouver Island, where unemployment has traditionally been higher than the provincial average. As shown in Table 5, the regions with some of the greatest impacts generated by the industry are also regions of the province with unemployment rates above the provincial average.

Table 5: Comparison of Vancouver Island Unemployment Rates in BC[17]

Region	North Vancouver Island	West Vancouver Island	East Vancouver Island	BC Unemployment Rate
Share of Impacts	40%	12%	6%	7.8%
Unemployment Rate	9.3%	8.3%	8.3%	

In addition, the average wage for the industry is estimated at $42,000, above the median employment income in BC of $32,888.[18] Consequently the industry provides high value employment in areas of the province with traditionally higher unemployment rates.

[17] Statistics Canada, "National Household Survey," supplemental data to the 2010 Census.
[18] Statistics Canada, "National Household Survey," supplemental data to the 2010 Census.

3.5 INDUSTRY COMPARISON

To provide perspective on the size of the economic impacts of the farm-raised salmon industry, it is useful to compare the impacts with those created by other industries. Three examples of other industries include home construction, film and televisions, and agriculture:

- **Home Construction** – The jobs supported by the farm-raised salmon industry are equivalent to the direct and indirect employment supported by the construction of 2,250 new homes in BC.[19] In 2013, 2,250 new home starts was equivalent to over 80 percent of the new home starts in Vancouver Island's seven largest communities.[20]
- **Film and Television** – The jobs supported by the farm-raised salmon industry is comparable with the production of eight 16-episode television series in BC.[21] The high-end production of each 16-episode television series in BC supports roughly 585 total FTE jobs. As such, the total FTE jobs for eight 16-episode television series is 4,680, comparable with that of the farm-raised salmon industry (4,977 FTEs). In addition, the estimated GDP reported to be created from eight 16-episode television series is about $273.5 million.[22] The GDP created by the activities of the farm-raised salmon industry ($411.5 million) is over 50 percent greater.
- **Agriculture** – The farm-raised salmon industry supports employment that is comparable with other agriculture industries including the BC beef cattle industry as well as the BC table egg industry (i.e. eggs not for hatching). The 4,977 FTEs supported by the farm-raised salmon industry are comparable with those reported for BC's beef cattle industry, which supports an estimated 4,242 FTEs.[23] The BC table egg industry is reported to support 2,498 FTE jobs,[24] or about half those supported by the farm-raised salmon industry. In addition, the GDP created by the farm-raised salmon industry ($411.5 million) is comparable with that reported for the BC beef cattle industry ($315.6 million) and about three times the GDP reported for the BC table egg industry ($130.1 million).

Case Study: Supporting Industry in BC

James Walkus Fishing Company is a First Nations, family-owned and run business in Port Hardy, BC. The company recently launched a $9-million boat to support the aquaculture industry in BC. The MS *Amarissa Joye*, named after James' granddaughters, was built in Vancouver and is the largest harvest vessel supporting BC's aquaculture industry. James' success and work with BCSFA member, Marine Harvest, has enabled his company to grow.

Indirect impacts of BC's aquaculture industry is represented by the success of James Walkus Fishing Company as well as the many other companies and workers that find employment in the jobs that support the province's salmon farming industry.

Source: BCSFA

[19] Will Dunning Inc., "Economic and Fiscal Impacts of Residential Construction – 2013," 2013. Available here: http://www.chba.ca/uploads/Economic%20Impacts/British%20Columbia%20Full%20Report.pdf
[20] The seven largest communities on Vancouver Island include Victoria, Nanaimo, Campbell River, Courtenay, Duncan, Port Alberni, and Parksville - Qualicum Beach. House starts data retrieved from BC Stats, "Housing Starts," available here: http://www.bcstats.gov.bc.ca/StatisticsBySubject/Economy/BuildingPermitsHousingStartsandSales.aspx
[21] MNP, "Assessing the Economic Impact of Attracting Five NBC Universal TV Services to British Columbia," 2014.
[22] MNP, "Assessing the Economic Impact of Attracting Five NBC Universal TV Services to British Columbia," 2014.
[23] MNP, "British Columbia's Beef Cattle Industry," 2013. Available here: http://www.cattlemen.bc.ca/docs/mnp_final_economic_impact_report_-_march_12_2013.pdf
[24] PWC, "Economic Impact of British Columbia's Dairy, Chicken, Turkey, Hatching Egg and Table Egg Industries," 2013. Available here: http://bcmilkmarketing.worldsecuresystems.com/_literature_188565/BC_DEPI_Economic_Impact_Report_2012

4. SOCIAL AND COMMUNITY CONTRIBUTIONS OF BCSFA MEMBERS

4.1 OVERVIEW

The social impacts of the members of the BCSFA include community contributions, partnerships in research and education, environmental initiatives and partnerships with First Nations. According to the survey conducted by MNP, all members of the BCSFA make social contributions to the communities in which they operate.

Community Contributions

According to survey responses, the members of the BCSFA sponsor and collaborate with a variety of charities and non-profit organizations that foster community development. From the survey responses, MNP estimates that over $600,000 was provided for community organizations and causes in 2013 by members of the BCSFA.

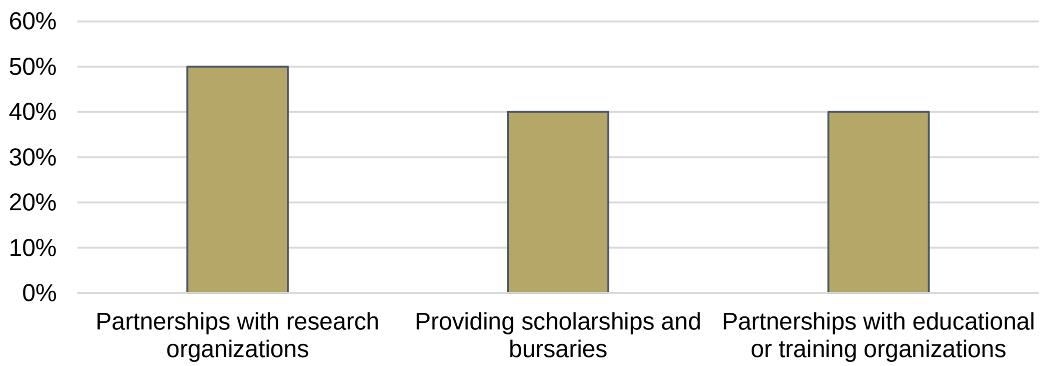
According to the survey, 40 percent of the members of the BCSFA contributed to community projects or organizations in 2013. The survey also indicated that 40 percent of the members of the BCSFA contributed to education and outreach in the community (e.g. open houses and tours).

Partnerships with Research and Education

According to survey responses, members of the BCSFA are partnered with research and education organizations throughout BC. Organizations largely include post-secondary institutions, including the University of BC, Vancouver Island University, Excel Career College and North Island College.

Survey results indicated that in 2013 half of all members of the BCSFA partnered with research organizations to promote research and training in aquaculture programs. The share of members that partnered in research and education is presented in Figure 9.

Figure 9: Estimated Share of BCSFA Members Engaged in Research and Education in 2013



Source: Member Survey

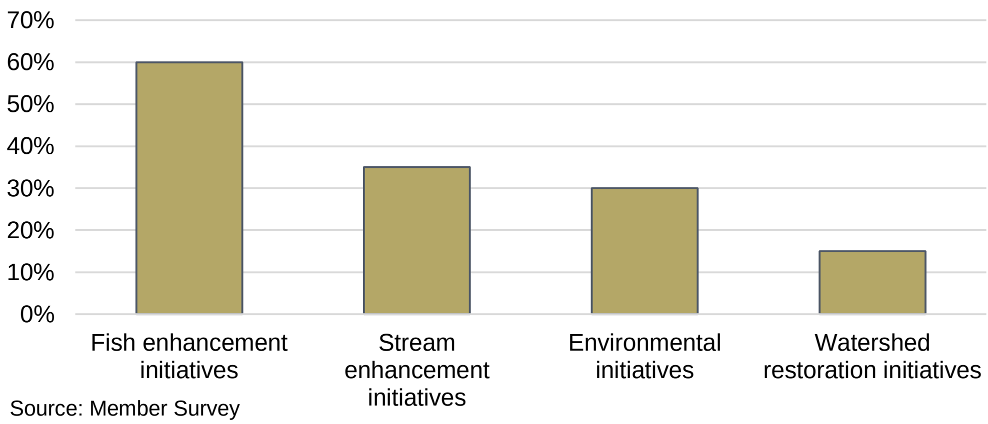
The members of the BCSFA also promoted research and education by providing scholarships and bursaries. Based on survey responses, it is estimated that 40 percent of the members of the BCSFA provided scholarships and bursaries in 2013.

Environmental Initiatives

According to survey responses, the environmental initiatives of the members of the BCSFA in 2013 included fish enhancement, stream enhancement, watershed restoration and other aquaculture-supported environmental initiatives. According to survey responses, these initiatives have helped rebuild salmon habitat impacted by historical industrial activities in close proximity to rivers and coastal areas across BC.

Fish enhancement initiatives are the most common environmental initiative reported by members of the BCSFA in the survey (60 percent), followed by stream enhancement (35 percent), other environmental initiatives (30 percent) and watershed restoration (15 percent). This is presented in Figure 10.

Figure 10: Estimated Share of BCSFA Members Engaged in Environmental Initiatives in 2013

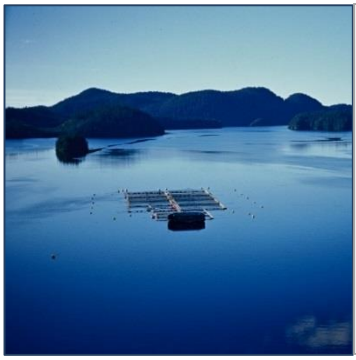


Source: Member Survey

The survey also indicated that each of the Producing Members of the BCSFA are engaged in at least two environmental initiatives.

Partnerships with First Nations

According to the BCSFA, the members of the Association have 17 Economic and Social Partnerships with First Nations along the coastal regions of BC. The BCSFA has a stated commitment to operate with the support and partnership of the First Nations within whose traditional territory they operate.[25] The partnerships work to integrate First Nations into the operations of aquaculture facilities including recognition of traditional territory, supporting economic development and promoting employment opportunities.



Case Study: Partnerships with First Nations

After accepting an invitation from the Hereditary Chiefs of the Tla-o-qui-aht First Nation, the BCSFA is holding its 31st Annual General Meeting and Salmon Aquaculture Business Summit in Tofino, BC. This event marks the first time that BC's salmon farmers have been collectively invited into the traditional territory of a coastal First Nation. Under the Tla-o-qui-aht's formal partnership agreement with BCSFA member Creative Salmon, both parties have appointed members to a Fish Farm Committee for regular and ongoing dialogue. The company employs 50 people who live in Tofino, Ucluelet, and First Nation communities on the west coast of Vancouver Island.

Source: BCSFA

[25] BCSFA, "Our Commitment," available here: http://www.salmonfarmers.org/sites/default/files/bcsfa_sustain_commitment-final.pdf

APPENDIX A – ECONOMIC IMPACT METHODOLOGY

MNP's estimates of the economic impacts of the farm-raised salmon industry have been developed using a BC Stats input-output model and related economic multipliers. A detailed, step-by-step overview of MNP's approach is provided below.

Step 1: Conduct a Survey of the Members of the BCSFA

↓

Step 2: Estimate the Wholesale and Production Value of Farm-Raised Salmon

↓

Step 3: Apply Multipliers and Review and Revise Estimates

↓

Step 4: Estimate the Allocation of Economic Impacts to the Coastal Regions of BC

Step 1: Conduct a Survey of the Members of the BCSFA

The first step to estimate the economic impacts of the farm-raised salmon industry in BC was to conduct a survey of the membership. The survey was sent to all 39 members of the BCSFA. There were 20 respondents to the survey, including all Producing Members.

The survey included questions on:

- The size, location, and number of facilities.
- Financial data.
- Employment information.
- Production statistics.
- Industry challenges.
- Contributions to the community.

The full survey is included in Appendix B.

Step 2: Estimate the Wholesale and Production Value of Farm-Raised Salmon

The next step to estimate the economic impacts of the farm-raised salmon industry in BC was to estimate the wholesale value of farm-raised salmon production in 2013. The wholesale value includes both the production of farm-raised salmon as well as the initial processing (e.g. dressing) to prepare the salmon for market.

As summarized in Table 6, the total wholesale value of farm-raised salmon in BC in 2013 was estimated at $594.5 million.[26] Of this, it is estimated that the production value (also known as the farm-gate value) was $480.4 million[27] and $114.1 million was the processing value add.

Table 6: BC Farm-Raised Salmon Output, 2013

Category of Output	Value (millions)
Production Value of Farm-Raised Salmon	$ 480.4
Processing Value-Add	$ 114.1
Total Wholesale Value	**$ 594.5**

Step 3: Apply Multipliers and Review and Revise Estimates

The next step in MNP's economic impact modelling was to estimate the economic impacts of the farm-raised salmon industry from the wholesale value. MNP mapped the production value and processing value-add estimates to economic impact multipliers published by BC Stats.[28] The multipliers produced the estimates of direct and indirect economic impacts, including output, GDP, employment and government revenue.

As part of the study, MNP compared the multipliers used by BC Stats[29] with those used by DFO (based on Statistics Canada multipliers).[30] While the multipliers are similar for direct and indirect impacts, substantial differences exist in the induced multipliers. Such a difference in economic data is not uncommon. For example, BC Stats notes in its 2012 report that there is a persistent gap between the GDP data sets between BC Stats and Statistics Canada.[31] As such, MNP used the mid-point between the two sets of multipliers for the induced impacts.

[26] BC Ministry of Agriculture, "Cultured Salmon Wholesale Value," 2013, available here: http://www.agf.gov.bc.ca/stats/YinReview/Seafood-YIR-2013.pdf.
[27] Fisheries and Oceans Canada, "Aquaculture Production Value," available here: http:///www.dfo-mpo.gc.ca/stats/aqua/aqua13-eng.htm
[28] BC Stats, "British Columbia's Fisheries and Aquaculture Sector," prepared for Fisheries and Oceans Canada, 2012. Available here: http://www.salmonfarmers.org/sites/default/files/british_columbias_fisheries_and _aquaculture_sector_ 2012_edition.pdf
[29] BC Stats, "British Columbia's Fisheries and Aquaculture Sector," prepared for Fisheries and Oceans Canada, 2012. Available here: http://www.salmonfarmers.org/sites/default/files/british_columbias_fisheries_and _aquaculture_sector_ 2012_edition.pdf
[30] Gardiner Pinfold, "Socio-Economic Impacts of Aquaculture in Canada: 2013 Edition," prepared for Fisheries and Oceans Canada Aquaculture Management Directorate, February 2013.
[31] BC Stats, "British Columbia's Fisheries and Aquaculture Sector," prepared for Fisheries and Oceans Canada, 2012, pg. 69, available here: http://www.salmonfarmers.org/sites/default/files/british_columbias_fisheries_and_ aquaculture_sector_ 2012_edition.pdf

Step 4: Allocate Economic Impacts to Coastal Regions of BC

After developing the economic impact estimates, MNP estimated the allocation of the economic impacts among the coastal regions of BC. MNP used survey data to allocate the economic impacts attributable to the coastal regions of the province.

Survey respondents provided their operating revenue by coastal region of BC. The share of revenues in each coastal region was used to estimate the economic impacts attributable to that region. The share of revenues was then modified based on the geographic location of firms to account for expenditures that leave one region and enter another. For example, the majority of production facilities are outside the Lower Mainland, but a significant number of suppliers (e.g. feed and transportation companies) are located in Vancouver and surrounding areas.

Note that economic impact multipliers are produced at the provincial level, and do not distinguish between the regional source of the impacts. The regional distribution of economic impacts is therefore an approximation using the best available information.

APPENDIX B – SURVEY OF MEMBERS OF THE BCSFA

Introduction

The BC Salmon Farmer's Association (BCSFA) has engaged MNP to assess the economic impacts of the BC farm-raised salmon industry to the provincial economy. The results from the study will help to demonstrate the importance of the industry to its members, government and other stakeholder groups. The economic impact study will also help the BCSFA establish an industry baseline to measure growth, monitor performance over time, and compare its contributions with other industries in the economy.

As a first step in the study MNP is looking to collect data from BCSFA members through a survey. Having a high participation rate in the survey is key for the overall success of the study.

Completing the survey should take no more than about 10-20 minutes. Thank you for taking the time to participate in the survey.

If you have any questions or experience technical difficulties with the survey, please contact [TO BE ENTERED]

Confidentiality Statement

Your responses to the survey will be held in confidence by MNP, and will only be reported in aggregated form. No individual responses will be reported. Results will be presented in summary format only.

By completing this survey you consent to have the data used for this project. Your participation is voluntary.

Background Information

Name of Business/Organization	
Address	
Phone Number	
Key Contact Person	
E-mail	

BC Operations Data

1. What are the aquaculture areas in which the <u>BC operations</u> of your business/organization participate (please select all that apply):
    - Fish hatcheries (up to smolt or equivalent)?
    - Fish farming (juvenile fish to adult fish)?
    - Fish feed?
    - Fish processing?
    - Research and development?
    - Product or service supplier?
    - Other (please describe)?

2. How many facilities does your business/organization operate in each of the following geographical locations? Please also indicate if the facilities are <u>stand-alone or integrated</u> across multiple

aquaculture areas.

- South Island (includes Cowichan and Capital Regional District) _________
- Mid-Vancouver Island West Coast (includes Alberni-Clayoquot Regional District) _________
- Mid-Vancouver Island East Coast (includes Comox Valley and Nanaimo Regional District) _________
- North Vancouver Island (includes Strathcona and Mount Waddington Regional Districts) _________
- Lower Mainland (includes Metro Vancouver, Sunshine Coast and Powell River Regional Districts) _________
- Central Coast (includes Central Coast and Kitimat-Stikine Regional Districts) _________
- Other (please indicate area) _________

3. Is your business/organization primarily engaged in freshwater or saltwater aquaculture in BC?

Production Data

4. What is the total annual production from the BC operations of your business/organization (please complete all that apply and indicate the units, eg. lbs, kg, tonnes):
   - Fish hatcheries (up to smolt or equivalent)?
   - Fish farming (juvenile fish to adult fish)?
     i. Live weight:
     ii. Head-on gutted weight:
   - Fish feed?
   - Fish processing?
   - Other (please describe)?

5. If the BC operations of your business/organization are engaged in fish farming, what is your total annual production, in live weight, from each of the following geographical locations? (please complete all that apply and indicate the units, eg. lbs, kg, tonnes):
   - South Island (includes Cowichan and Capital Regional District) _________
   - Mid-Vancouver Island West Coast (includes Alberni-Clayoquot Regional District) _________
   - Mid-Vancouver Island East Coast (includes Comox Valley and Nanaimo Regional District) _________
   - North Vancouver Island (includes Strathcona and Mount Waddington Regional Districts) _________
   - Lower Mainland (includes Metro Vancouver, Sunshine Coast and Powell River Regional Districts) _________
   - Central Coast (includes Central Coast and Kitimat-Stikine Regional Districts) _________
   - Other (please indicate area) _________

6. If the BC operations of your business/organization are engaged in fish farming, what is your total annual production across the following species (please complete all that apply and indicate the units, eg. lbs, kg, tonnes):
   - Atlantic salmon _____
   - Steelhead _____
   - Coho _____
   - Chinook ______
   - Other (please describe) _______

Revenue Data

7. What was the total annual sales revenue for the BC operations of your business/organization in 2013? ___________

8. What was the approximate percentage allocation of 2013 sales revenue for the BC operations of your business/organization by geographic location?

    - South Island (includes Cowichan and Capital Regional District) _________
    - Mid-Vancouver Island West Coast (includes Alberni-Clayoquot Regional District) ________
    - Mid-Vancouver Island East Coast (includes Comox Valley and Nanaimo Regional District) ________
    - North Vancouver Island (includes Strathcona and Mount Waddington Regional Districts) _________
    - Lower Mainland (includes Metro Vancouver, Sunshine Coast and Powell River Regional Districts) __________
    - Central Coast (includes Central Coast and Kitimat-Stikine Regional Districts) ______
    - Other (please indicate area) _________

9. What was the approximate percentage allocation of 2013 sales revenue for the BC operations of your business/organization for each of the following aquaculture activities:
    - Fish hatcheries (up to smolt or equivalent)?
    - Fish farming (juvenile fish to adult fish)?
    - Fish feed?
    - Fish processing?
    - Products or services supplied?
    - Other (please describe)?

Employment Data

10. Approximately how many full time employees were there in the BC operations of your business/organization in 2013?

11. Approximately how many part time or seasonal employees were there in the BC operations of your business/organization in 2013?

12. On average, approximate how many weeks did a part time or seasonal employee work in 2013?

13. On average, approximately how many hours per week did a part time or seasonal employee work in 2013?

Capital Expenditure Data

14. What was the approximate 2013 total capital expenditure for the BC operations of your business/organization in 2013 (not including spending on regular repairs and maintenance)? _______________.

Operating Expenses

15. What were the approximate operating expenses for the BC operations of your business/organization in 2013?

Physical Infrastructure:	
Operational leases/Rent	$
Repairs and Maintenance	$
Raw materials (eg. feed)	$
Personnel costs (eg. salary, wages, benefits)	$
Professional fees	$
Depreciation and amortization	$
Sales and administration	$
Delivery, transportation and freight	$
Other:	
Please specify:	$
Total	

16. Approximately how much did the BC operations of your business/organization spend in 2013 on purchases of goods and services from <u>all suppliers and other businesses</u>?

17. Approximately how much did the BC operations of your business/organization spend in 2013 on purchases of goods and services from <u>BC suppliers and other businesses</u>?

18. What was the approximate amount of property taxes paid by the <u>BC operations</u> of your business/organization in 2013?

Industry Challenges

19. What are the primary challenges currently faced by the <u>BC operations</u> of your business/organization?
    - Profitability?
    - Economy?
    - Access to markets?
    - Labour shortages?
    - Regulation?
    - Competition?
    - Environmental impacts?
    - Other (please describe)?

Social and Community Questions

20. Which of the following organizations and causes did the <u>BC operations</u> of your business/organization contribute in 2013?
    - Stream enhancement initiatives?
    - Fish enhancement initiatives?
    - Watershed restoration initiatives?
    - Partnerships with research organizations?
    - Scholarships/bursaries?
    - Partnerships with educational or training organizations?
    - Environmental initiatives?
    - Community projects or organizations?
    - Education/outreach in the community (eg. open houses, tours, etc.)?

- Other social or community activities (please describe)?

21. What was the total dollar amount contributed to community organizations or causes in 2013?

Conclusion

22. Thank you for your participation in the survey. If we have any follow up questions or require any additional information, may we contact you? If yes, please provide us a contact name and details:

    Contact Name ________________________
    Phone Number _______________________
    Email _______________________________

APPENDIX C – ABOUT MNP

MNP is the fastest growing major chartered accountancy and business advisory firm in Canada. Founded in 1945, MNP has grown from a single office in Manitoba to more than 70 offices and 3,000 team members across Canada. In British Columbia, MNP has more than 700 staff located in 17 offices across the province.

MNP is a member of Praxity AISBL, a global alliance of independent firms, which enables us to access a broad range of industry specific expertise worldwide.

At MNP, our professionals are the driving force behind our success. They continue to demonstrate our culture and values which is integral to the way we conduct business, both internally and externally. As such, MNP is proud to be recognized for the third year in a row as one of the *50 Best Employers in Canada* by *Maclean's* magazine.

MNP provides a wide range of accounting, finance and business advisory services to clients. These include:

- Assurance
- Corporate Finance
- Enterprise Risk Services
- Consulting
- Succession
- Taxation
- Mergers and Acquisitions
- Forensic Accounting
- Insolvency and Corporate Recovery
- Valuations and Litigation Support