
The New Zealand Seafood Industry Council

Economic Impact Assessment for
New Zealand Regions

APPENDIX TWO:
Detailed Regional Impacts
SOUTH ISLAND

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1 MARLBOROUGH

1.1 BACKGROUND AND CONTEXT

In 1998 the GDP of Marlborough Region's economy was \$1.0 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 3.9 percent, faster than the national average of 3.5 percent.

Marlborough's population is currently around 39,900, and the region is growing fairly rapidly. Between 1991 and 1996 it grew at an annual average rate of 1.8 percent compared to the national inter-census average of 1.4 percent. Much of this growth is attributable to migration, particularly from Canterbury and Wellington. The region has the oldest median age in the country.

Healthy population growth in the Marlborough Region should ensure continuing robust economic growth for the region, for the construction and retail industries in particular. The outlook for the export-oriented horticultural, forestry and seafood industries is also strong, given the favourable international environment.

1.2 POPULATION AND EMPLOYMENT

Marlborough Region was home to 38,397 people at the time of the 1996 census, a similar population to the three other unitary authorities, neighbouring Nelson, Tasman and Gisborne. Its population grew at an annual average rate of approximately 1.8 percent between the 1991 and 1996 censuses. This is faster than the national population, and the population is forecast to reach 45,600 by 2021. About 40 percent of the region's inter-census population growth came from internal migration, mostly from Canterbury and Wellington.

With Blenheim being the only major urban centre, the region is sparsely populated. The population is about 75.0 percent urban, compared to 85.4 percent nationally. The median age is the highest in the country at 36.1 years, due to the large number of

retirees, and because migrants leaving the region tend to be those in younger age groups seeking better educational and employment opportunities in larger centres. The region has one of the highest proportions of people with European ethnicity, and 10.6 percent of the population identifies with Maori ethnicity.

Employment in Marlborough Region in 1998 was around 16,200 FTEs, or 1.1 percent of employment in New Zealand. The region's economy generated employment growth at a rapid annual average rate of 5.1 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail trade industry is the largest employer, with 2,214 FTEs, 13.6 percent of the region's total employment. Other major employers include horticulture and the Woodbourne Air Force Base.

The fishing and seafood processing industry is one of the region's most important industries, employing about 1,090 FTEs. This is about 6.7 percent of the region's total FTEs, and represents 5.6 percent of New Zealand industry total. The 193 business units in the industry average 5.6 FTEs each, close to the industry average of 5.0 FTEs.

1.3 ECONOMIC STRUCTURE

Marlborough Region's economy generated approximately \$1.0 billion of value-added in 1998. This represents 1.1 percent of New Zealand total. GDP growth has been faster than in the national economy overall, averaging 3.9 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis however, due to rapid population growth the Marlborough Region average is similar to the 2.1 percent achieved nationally.

Central Government services contribute about \$93 million to the Marlborough Region's economy, because of the presence of the Woodbourne Air Force Base. The industries the region is best known for are horticulture, which generates \$53 million (5.1 percent) of GDP, and sheep farming. The major crops include grapes and cherries. A high proportion of the workforce is employed in the food manufacturing industry, reflecting the importance of the wine-making industry. The fishing and seafood processing industry is also of great importance to the region, with GDP of \$46 million. Significant aquaculture operations are established in the Marlborough Sounds, with mussels,

oysters, salmon and scallops being produced. Forestry is expanding rapidly in the region, with production expected to increase almost threefold between 1996 and 2006.

Table 1.1: Selected Marlborough Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	2,210	106	10.2%
Central Government Services	1,260	93	8.9%
Horticulture	1,420	53	5.1%
Manufacture of Food other than Seafood, Dairy and Meat	1,070	50	4.9%
<i>Seafood Industry</i>	<i>1,090</i>	<i>46</i>	<i>4.4%</i>
Forestry & Logging	220	38	3.6%

1.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 1.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$13.5 million in value added, or 29.6 percent of the total Marlborough seafood industry value added. Output is around \$38.0 million. The sector employs 210 FTEs, 19.3 percent of total employment in the Marlborough seafood industry (Table 1.2).

Fishing in Inland Waters and Fish Farming

Fishing in inland waters and fish farming has a direct impact of \$1.5 million in value added, or 3.3 percent of total seafood industry value added in Marlborough. Total output is \$5.2 million. The employment generated by this level of activity is about 290 FTEs (Table 1.2).

Fish and Shellfish Processing

Fish and shellfish processing directly contributes \$30.6 million of value added to the Marlborough seafood industry, 71.0 percent of the seafood industry's GDP. Annual

processing output is \$51.8 million. The sector employs about 590 FTEs, more than half of the total Marlborough seafood industry workforce (Table 1.2).

Table 1.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
Output (\$000)	37,980	8,110	112,970
Value Added (\$000)	13,480	1,510	30,590
Employment (FTEs)	210	290	590

1.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 1.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 1.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output Impacts</i>			
Type I Multiplier	1.86	1.73	2.09
Type II Multiplier	2.06	1.97	2.30
<i>Value Added Impacts</i>			
Type I Multiplier	2.20	2.76	2.71
Type II Multiplier	2.45	3.35	3.07
<i>Employment Impacts</i>			
Type I Multiplier	1.78	1.16	2.23
Type II Multiplier	2.08	1.21	2.58

Ocean and Coastal Fishing and Fishing Consultants

The majority of output from ocean and coastal fishing and fishing consultants goes directly into fish and shellfish processing. In 1998 the fish and shellfish processing industry consumed more ocean and coastal fishing and fishing consultants' output than the entire output of the ocean and coastal fishing and fishing consultants industry itself, due to a decrease in stocks. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Most of the remaining output is goes to the fruit and vegetable processing industry (Table 1.4).

Table 1.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	43,360	114.2%
Fruit and Vegetable Processing	2,080	5.5%
Other	-7,460	-19.7%
TOTAL	37,980	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$19.6 million of value added from output of \$40.2 million. This level of activity generates employment equivalent to approximately 220 FTEs (Table 1.7).

Fishing in Inland Waters and Fish Farming

Part of the output of fishing in inland waters and fish farming (10.1 percent) goes directly to fish and shellfish processing and therefore cannot be included in multiplier

analysis of this section of the industry. Almost all the remaining output (89.7 percent) is exported either overseas or to other regions (Table 1.5).

Table 1.5: Consumption of Fishing in Inland Waters and Fish Farming Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	7,280	89.7%
Fish and Shellfish Processing	820	10.1%
Other	10	0.1%
TOTAL	8,110	100.0%

The indirect impact is estimated at some \$2.7 million value added. An additional \$900,000 is generated by the induced impact, for a total of \$3.5 million value added. Indirect and induced output totals \$7.9 billion, while the employment impact is an additional 60 FTEs (Table 1.7).

Fish and Shellfish Processing

About 93.5 percent (\$105.7 million) of fish and shellfish processing output is exported either inter-regionally or internationally. Most of the remaining 6.5 percent goes back into the processing industry itself (Table 1.6).

Table 1.6: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	105,660	93.5%
Fish and Shellfish Processing	4,310	3.8%
Other	3,000	2.7%
TOTAL	112,970	100.0%

The indirect and induced economic impacts of fish and shellfish processing in Marlborough total \$63.2 million of value added from output of \$147.3 million. The employment impact is 930 FTEs, 200 of which result from induced impacts (Table 1.7).

Table 1.7: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output (\$000)</i>			
Direct	37,980	8,110	112,970
Indirect	32,580	5,910	122,760
Induced	7,610	1,970	24,510
Total	78,180	15,990	260,230
% of Total Output	1.97%	0.40%	6.57%
<i>Value Added (\$000)</i>			
Direct	13,480	1,510	30,590
Indirect	16,130	2,650	52,180
Induced	3,430	890	11,030
Total	33,040	5,050	93,800
% of Total GDP	3.18%	0.49%	9.03%
<i>Employment (FTEs)</i>			
Direct	210	290	590
Indirect	160	40	730
Induced	60	20	200
Total	440	350	1,520
% of Total Employment	2.68%	2.16%	9.36%

1.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry.

The only significant forward linkage of the fishing sector of the seafood industry not already captured by fish and shellfish processing occurs in the fruit and vegetable processing industry. Approximately 3.1 percent (\$2.1 million) of the fruit and vegetable industry's output is directly attributable to activity in the fishing sector of the seafood industry. This equates to \$460,000 of value added (Table 1.8).

Table 1.8: Major Direct Impacts of Fishing on Other Industries

Source: McDermott Fairgray Group Ltd.

Fruit and Vegetable Processing	
Output (\$000)	67,470
Value Added (\$000)	14,830
Employment (FTEs)	390
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	2,090
Value Added (\$000)	460
Employment (FTEs)	10

The indirect and induced impacts on value added resulting from the share of fruit and vegetable processing attributable to the seafood industry amount to \$950,000 of value added. This level of activity sustains employment for some 20 FTEs. Total direct, indirect and induced economic impacts sum to \$1.4 million of value added and 30 FTEs (Table 1.9).

Table 1.9: Major Output, Value Added and Employment Impacts on Other Industries

Source: McDermott Fairgray Group Ltd.

Fruit and Vegetable Processing	
<i>Output (\$000s)</i>	
Direct	2,090
Indirect	1,710
Induced	470
Total	4,270
% of Total Output	0.11%
<i>Value Added (\$000s)</i>	
Direct	460
Indirect	750
Induced	200
Total	1,410
% of Total GDP	0.14%
<i>Employment (FTEs)</i>	
Direct	10
Indirect	20
Induced	0
Total	30
% of Total Employment	0.20%

1.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Marlborough seafood industry amount to \$133.3 million of value added and 2,330 FTEs (Table 1.10). The majority (70.4 percent) of the total value added impact is attributable to the fish and shellfish processing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$87.3 million compared to direct impacts of \$46.0 million. The implied value added multiplier is 2.90. The corresponding employment multiplier is 2.12. These are somewhat lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 1.10: Seafood Industry Impact Summary

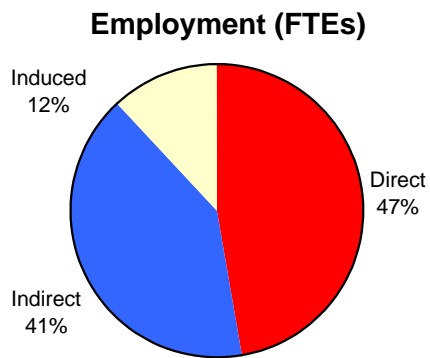
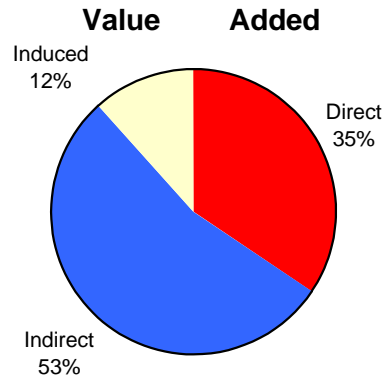
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	46.1	113.0	2.1	161.2
Indirect	38.5	122.8	1.7	163.0
Induced	9.6	24.5	0.5	34.6
Total	94.2	260.2	4.3	358.7
<i>Value Added (\$m)</i>				
Direct	15.0	30.6	0.5	46.0
Indirect	18.8	52.2	0.8	71.7
Induced	4.3	11.0	0.2	15.6
Total	38.1	93.8	1.4	133.3
<i>Employment (FTEs)</i>				
Direct	500	590	10	1,100
Indirect	200	730	20	950
Induced	80	200	0	280
Total	780	1,520	30	2,330

Direct impacts account for 35 percent of total value added impacts and 47 percent of employment impacts (Figure 1.1 overleaf).

Figure 1.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



1.4 ECONOMIC OUTLOOK

With the exception of central government services, Marlborough's major industries such as horticulture, seafood and forestry have a strong export orientation. The outlook for exports is favourable, due to the weak \$NZ and the generally healthy economies of New Zealand's major export markets. The strong international reputation of the region's rapidly growing wine-making industry is helping drive the economy. The industry is particularly valuable due to horticulture's high ratio of value added to output compared to other primary industries. Continuing rapid population growth will bolster domestic demand, thereby aiding industries such as retail and construction.

2 NELSON

2.1 BACKGROUND AND CONTEXT

In 1998 the GDP of Nelson Region's economy was \$1.2 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 4.1 percent, faster than the national average of 3.5 percent.

Nelson's population is currently around 41,400, and the region is growing rapidly. Between 1991 and 1996 it grew at an annual average rate of 2.0 percent compared to the national inter-census average of 1.4 percent. Migration both internal and external is the major driver of population growth.

The rapid population growth of the Nelson Region should ensure continuing robust economic growth for the region, for the healthcare, construction and retail industries in particular. The outlook for the export-oriented fishing and seafood processing industry and food manufacturing is also strong, given the favourable international market environment.

2.2 POPULATION AND EMPLOYMENT

Nelson Region was home to 40,279 people at the time of the 1996 census, a similar population to the three other unitary authorities, neighbouring Tasman and Marlborough, and Gisborne in the North Island. Its population grew at an annual average rate of approximately 2.0 percent between the 1991 and 1996 censuses. This is substantially faster than the national population, and the population is forecast to reach 51,700 by 2021. Population growth is being primarily driven by migration, both external and internal. The region is a popular retirement destination due to its sunny climate and beaches.

The region is the smallest in the country, but being almost entirely urban has the second-highest population density behind Auckland. Part of the Nelson City urban area is actually in Tasman Region, and the rapid growth of this part of the city means that

the city as a whole is actually growing considerably faster than the Nelson Region figure suggests.

Nelson is a popular retirement destination, and the median age in the region is 35.0 years, one of the highest in the country behind neighbouring Tasman and Marlborough regions. The proportion of people over the age of 75 is the highest in the country. The region is one of the most racially homogenous, with 94.5 percent of the population identifying with European ethnicity. However the small Maori population is growing rapidly. This is possibly due to the major significance of the fishing industry in the region, which is typically a major employer of Maori.

Employment in Nelson Region in 1998 was 18,090 FTEs, or 1.2 percent of employment in New Zealand. The region's economy generated employment growth at a rapid annual average rate of 4.3 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 3,094 FTEs, 17.1 percent of the region's total employment. Other large employers include health and community services (1,970 FTEs) and food manufacturing (1,680 FTEs).

The fishing and seafood processing industry is the region's economic mainstay, employing about 2,170 FTEs in the Nelson Region. This is about 12.0 percent of the region's total FTEs, and represents 20.9 percent of the industry total. The 168 business units in the industry average 12.9 FTEs each compared to 5.0 nationally, indicating the commercial scale of fisheries operations. The majority of employment in the industry occurs in seafood processing plants.

2.3 ECONOMIC STRUCTURE

Nelson Region's economy generated approximately \$1.2 billion of value-added in 1998. This represents 1.2 percent of New Zealand total. GDP growth has been more rapid than in the national economy overall, averaging 4.1 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis however, due to rapid population growth, the Nelson Region averages 2.0 percent compared to 2.1 percent nationally.

The fishing and seafood processing industry in Nelson generates GDP of about \$117 million, almost 10 percent of total GDP. Approximately two thirds of this is attributable to fish and shellfish processing, the balance to offshore and coastal fishing. More than 100 fishing boats use the port, one of the country's busiest.

Health and community services is also a larger contributor to the region's economy than is the norm, with GDP of \$95 million. This is due to the region's large elderly population, and because the city services the neighbouring Tasman Region and to lesser extent Marlborough. Fruit and vegetable processing is an important industry with adding value of approximately \$85 million annually. Intensive horticultural activity occurs in nearby areas of Tasman Region. The forestry industry in neighbouring regions also contributes to Nelson's economy through utilisation of the port.

Table 2.1: Selected Nelson Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	3,090	148	12.5%
<i>Seafood Industry</i>	<i>2,170</i>	<i>117</i>	<i>9.9%</i>
Health and Community Services	1,970	95	8.1%
Manufacture of Food other than Seafood, Dairy and Meat	1,680	85	7.2%
Communications Services	340	52	4.4%
Business Services	1,320	51	4.3%

2.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 2.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$40.2 million in value added, or 34.3 percent of the total Nelson seafood industry value added. Output is around \$113.2 million. The sector employs 620 FTEs, 28.7 percent of total employment in the Nelson seafood industry (Table 2.2).

Fishing in Inland Waters and Fish Farming

Fishing in inland waters and fish farming has a direct impact of \$330,000 in value added, or 0.3 percent of total seafood industry value added in Nelson. Total output is \$1.8 million. The employment generated by this level of activity is about 60 FTEs (Table 2.2).

Fish and Shellfish Processing

Fish and shellfish processing directly contributes \$76.7 million of value added to the Nelson seafood industry, 65.4 percent of the seafood industry's GDP. Annual processing output is \$283.4 million. The sector employs about 1,480 FTEs, or 68.5 percent of the total Nelson seafood industry workforce (Table 2.2).

Table 2.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
Output (\$000)	113,210	1,790	283,370
Value Added (\$000)	40,170	330	76,720
Employment (FTEs)	620	60	1,480

2.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 2.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 2.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output Impacts</i>			
Type I Multiplier	1.78	1.99	2.13
Type II Multiplier	2.05	2.31	2.41
<i>Value Added Impacts</i>			
Type I Multiplier	2.50	3.44	3.02
Type II Multiplier	2.84	4.22	3.48
<i>Employment Impacts</i>			
Type I Multiplier	1.69	1.20	2.33
Type II Multiplier	2.08	1.27	2.75

Ocean and Coastal Fishing and Fishing Consultants

Almost all of output from ocean and coastal fishing and fishing consultants (96.1 percent) goes directly into fish and shellfish processing. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Most of the remaining output (\$3.4 million) is exported directly (Table 2.4).

Table 2.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	108,780	96.1%
Inter-regional and International Exports	3,440	3.0%
Other	990	0.9%
TOTAL	113,210	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$74.1 million of value added from output totalling \$118.6 million. This level of activity generates employment equivalent to 670 FTEs (Table 2.7).

Fishing in Inland Waters and Fish Farming

The entire output from fishing in inland waters and fish farming goes directly into fish and shellfish processing. In 1998 the fish and shellfish processing industry consumed

more fishing in inland waters and fish farming output than the entire output of the fishing in inland waters and fish farming industry itself, due to a decrease in stocks. Indirect and induced impacts from this portion cannot be included in multiplier analysis of this section of the industry because of double-counting. No other industries are significant consumers of fishing in inland waters and fish farming output (Table 2.5).

Table 2.5: Consumption of Fishing in Inland Waters and Fish Farming Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	2,060	115.3%
Other	-270	-15.3%
TOTAL	1,790	100.0%

The indirect impact is estimated at some \$810,000. An additional \$260,000 is generated by the induced impact, for a total of \$1.1 million value added. The employment impact is 10 FTEs (Table 2.7).

Fish and Shellfish Processing

About 79 percent of fish and shellfish processing output is exported either internationally or inter-regionally. Most of the remaining output flows back into the fish and shellfish processing industry itself (3.8 percent). All other industries combined consume less than 1 percent of fish and shellfish processing output (Table 2.6).

Table 2.6: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	269,920	95.3%
Fish and Shellfish Processing	10,810	3.8%
Other	2,640	0.9%
TOTAL	283,370	100.0%

The indirect and induced economic impacts of fish and shellfish processing in Nelson total \$190.5 million of value added from output of \$400.1 million. The employment impact is 2,600 FTEs, 630 of which result from induced impacts (Table 2.7).

Table 2.7: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output (\$000)</i>			
Direct	113,210	1,790	283,370
Indirect	87,910	1,770	321,130
Induced	30,640	580	78,950
Total	231,760	4,130	683,450
% of Total Output	5.14%	0.09%	15.17%
<i>Value Added (\$000)</i>			
Direct	40,170	330	76,720
Indirect	60,440	810	155,310
Induced	13,650	260	35,180
Total	114,270	1,400	267,220
% of Total GDP	9.66%	0.12%	22.58%
<i>Employment (FTEs)</i>			
Direct	620	60	1,480
Indirect	430	10	1,970
Induced	240	0	630
Total	1,290	80	4,070
% of Total Employment	7.15%	0.45%	22.52%

2.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry. In Nelson however these impacts are not significant.

2.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Nelson seafood industry amount to \$382.9 million of value added and 5,440 FTEs (Table 2.8). The majority (69.8 percent) of the total value added impact is attributable to the fish and shellfish processing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$265.7 million compared to direct impacts of \$117.2 million. The implied value added multiplier is 3.27. The corresponding employment multiplier is 2.52. These are similar to the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 2.8: Seafood Industry Impact Summary

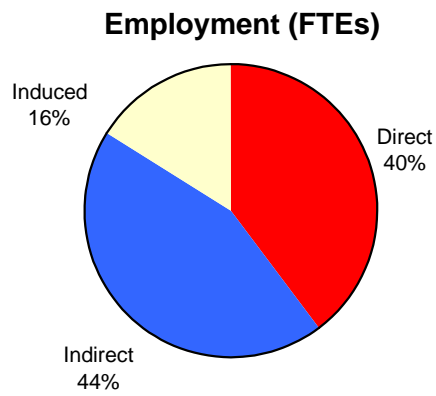
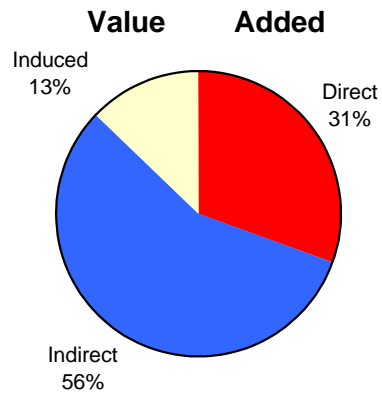
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	TOTAL
<i>Output (\$m)</i>			
Direct	115.0	283.4	398.4
Indirect	89.7	321.1	410.8
Induced	31.2	79.0	110.2
Total	235.9	683.5	919.4
<i>Value Added (\$m)</i>			
Direct	40.5	76.7	117.2
Indirect	61.3	155.3	216.6
Induced	13.9	35.2	49.1
Total	115.7	267.2	382.9
<i>Employment (FTEs)</i>			
Direct	680	1,480	2,160
Indirect	440	1,970	2,410
Induced	240	630	870
Total	1,360	4,080	5,440

Direct impacts account for 31 percent of total value added impacts and 40 percent of employment impacts (Figure 2.1 overleaf).

Figure 2.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



2.4 ECONOMIC OUTLOOK

Nelson Region seems well positioned to enjoy robust growth, driven by strong population growth both within the region and in neighbouring regions, and by favourable conditions for the region's major industries. The region's status as the major urban area of the surrounding regions means that with the exception of the fishing industry, secondary and tertiary industries predominate. This makes the region less reliant on primary commodity prices than more rural regions.

The NZIER is predicting strong growth in demand for fishing output over the next few years, particularly as the economies of important Asian trading partners rebound stronger than expected from the financial crisis of 1997-98. In addition, Nelson's burgeoning elderly population means that demand for the important medical services industry should remain buoyant.

3 TASMAN

3.1 BACKGROUND AND CONTEXT

In 1998 the GDP of Tasman Region's economy was \$901.9 million. Between 1993 and 1998, the region's GDP grew at an annual average rate of 3.7 percent, faster than the national average of 3.5 percent.

Tasman's population is currently around 40,000, and the region is growing rapidly. Between 1991 and 1996 it grew at an annual average rate of 2.2 percent compared to the national inter-census average of 1.4 percent. Much of this growth is attributable to the rapid expansion of Nelson City, most of which lies in Nelson Region. Therefore people may migrate between regions while remaining in the Nelson urban area.

The rapid population growth of the Tasman Region should ensure continuing robust economic growth for the region, for the construction and retail industries in particular. The outlook for the export-oriented fishing and seafood processing industry and forestry is also strong, given the favourable international environment.

3.2 POPULATION AND EMPLOYMENT

Tasman Region was home to 37,973 people at the time of the 1996 census, a similar population to the three other unitary authorities, neighbouring Nelson, Marlborough and Gisborne. Its population grew at an annual average rate of approximately 2.7 percent between the 1991 and 1996 censuses. This is substantially faster than the national population, and the population is forecast to reach 48,800 by 2021. Population growth is being primarily driven by migration. Like neighbouring Nelson and Marlborough, the region is a popular retirement destination due to its sunny climate and beaches. However the most migration has come from Nelson, as people move to the expanding areas of the Nelson urban area which lie within Tasman Region.

With no major urban areas the region is the second least densely populated in the country. The population is only 56.9 percent urban, compared to 85.4 percent

nationally. The median age is well above the national average, due to the large number of retirees, and because migrants leaving the region tend to be those in younger age groups seeking better educational and employment opportunities in larger centres. 96.8 percent of Tasman Region's population is of European ethnicity, the highest proportion in the country.

Employment in Tasman Region in 1998 was 13,606 FTEs, or 0.9 percent of employment in New Zealand. The region's economy generated employment growth at a rapid annual average rate of 5.4 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The fruit growing industry is the largest employer, with 2,055 FTEs, 15.1 percent of the region's total employment. However much of this employment occurs during the apple harvesting season when there is a large influx of seasonal workers from outside the region.

The fishing and seafood processing industry is one of the region's most important industries, employing about 650 FTEs. This is about 4.8 percent of the region's total FTEs, and represents 6.3 percent of New Zealand industry total. The 63 business units in the industry average 10.3 FTEs each compared to 5.0 nationally, indicating the commercial scale of fisheries operations. Much of this employment occurs at the large Talley's fish processing plant at Port Motueka, and a smaller plant at Tarakohe in Golden Bay.

3.3 ECONOMIC STRUCTURE

Tasman Region's economy generated approximately \$901.9 million of value-added in 1998. This represents 0.9 percent of New Zealand total. GDP growth has been slightly faster than in the national economy overall, averaging 3.7 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis however, due to rapid population growth the Tasman Region averages 1.5 percent compared to 2.1 percent nationally.

Horticulture is the largest industry in the region, with GDP of about \$95 million annually. Major crops include berries, apples, pears and hops. Forestry and logging contributes \$59 million to the region's GDP, and is a rapidly expanding industry. The region has the world's largest medium density fibreboard mill in Richmond, which produces output

for both export and domestic markets. The seafood industry has an output of \$119.5 million, which generates \$34.9 million of value-added.

Table 3.1: Selected Tasman Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Horticulture	2,490	95	10.5%
Wholesale and Retail Trade	1,920	92	10.2%
Forestry & Logging	450	59	6.5%
Wood & Wood Products	750	36	4.0%
<i>Seafood Industry</i>	<i>650</i>	<i>35</i>	<i>3.9%</i>
Construction	920	30	3.3%

3.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 3.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$11.0 million in value added, or 31.4 percent of the total Tasman seafood industry value added. Output is around \$30.1 million. The sector employs 170 FTEs, 26.2 percent of total employment in the Tasman seafood industry (Table 3.2).

Fish and Shellfish Processing

Fish and shellfish processing directly contributes \$23.9 million of value added to the Tasman seafood industry, 68.3 percent of the seafood industry's GDP. Annual processing output is \$88.1 million. The sector employs about 460 FTEs, or 70.8 percent of the total Tasman seafood industry workforce (Table 3.2).

Table 3.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fish and Shellfish Processing
Output (\$000)	30,890	88,070
Value Added (\$000)	10,960	23,850
Employment (FTEs)	170	460

3.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 3.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 3.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fish and Shellfish Processing
<i>Output Impacts</i>		
Type I Multiplier	1.18	1.75
Type II Multiplier	1.24	1.89
<i>Value Added Impacts</i>		
Type I Multiplier	1.30	2.10
Type II Multiplier	1.38	2.34
<i>Employment Impacts</i>		
Type I Multiplier	1.27	1.96
Type II Multiplier	1.37	2.18

Ocean and Coastal Fishing and Fishing Consultants

The majority of output from ocean and coastal fishing and fishing consultants goes directly into fish and shellfish processing. In 1998 the fish and shellfish processing industry consumed more ocean and coastal fishing and fishing consultants' output than the entire output of the ocean and coastal fishing and fishing consultants industry itself, due to a decrease in stocks (Table 3.4). Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur.

Table 3.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	33,810	109.4%
Other	-2,920	-9.5%
TOTAL	30,890	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$4.2 million of value added from output of \$7.4 million. This level of activity generates employment equivalent to an additional 70 FTEs (Table 3.6).

Fish and Shellfish Processing

About 93.8 percent of fish and shellfish processing output is consumed by inter-regional and international exports. Most of the rest flows back into the fish and shellfish processing industry itself (3.8 percent). Other industries consume smaller amounts totalling \$2.1 million (Table 3.5).

Table 3.5: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	82,570	93.8%
Fish and Shellfish Processing	3,360	3.8%
Other	2,140	2.4%
TOTAL	88,070	100.0%

The indirect and induced economic impacts of fish and shellfish processing in Tasman are around \$32.0 million value added from \$78.1 million of output. The employment impact is 540 FTEs, 100 of which result from induced impacts (Table 3.6).

Table 3.6: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fish and Shellfish Processing
<i>Output (\$000)</i>		
Direct	30,890	88,070
Indirect	5,410	65,720
Induced	2,030	12,370
Total	38,320	166,160
% of Total Output	1.15%	4.98%
<i>Value Added (\$000)</i>		
Direct	10,960	23,850
Indirect	3,240	26,290
Induced	940	5,730
Total	15,150	55,870
% of Total GDP	1.68%	6.19%
<i>Employment (FTEs)</i>		
Direct	170	460
Indirect	50	440
Induced	20	100
Total	230	1,000
% of Total Employment	1.70%	7.35%

3.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry. In Tasman however these impacts are not large enough to be significant.

3.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Taranaki seafood industry amount to \$71.3 million of value added and 610 FTEs (Table 3.7). The majority (78.4 percent) of the total value added impact is attributable to the fish and shellfish processing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$36.4 million compared to direct impacts of \$34.9 million. The implied value added multiplier is 2.04. The corresponding employment multiplier is 1.94. These are considerably lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 3.7: Seafood Industry Impact Summary

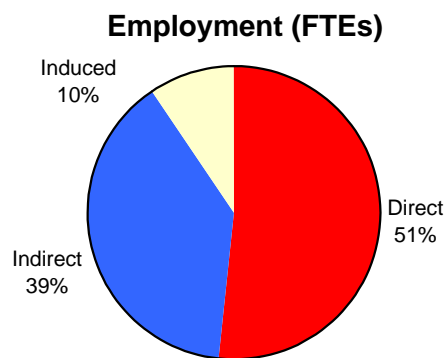
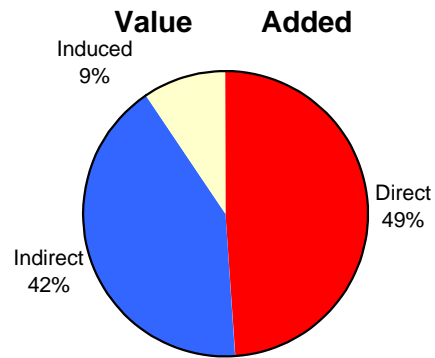
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	TOTAL
<i>Output (\$m)</i>			
Direct	31.5	88.1	119.5
Indirect	5.7	65.7	71.4
Induced	2.1	12.4	14.5
Total	39.3	166.2	205.5
<i>Value Added (\$m)</i>			
Direct	11.1	23.9	34.9
Indirect	3.4	26.3	29.7
Induced	1.0	5.7	6.7
Total	15.4	55.9	71.3
<i>Employment (FTEs)</i>			
Direct	190	460	650
Indirect	50	440	490
Induced	20	100	120
Total	260	1,000	1,260

Direct impacts account for 49 percent of total value added impacts and 51 percent of employment impacts (Figure 3.1 overleaf).

Figure 3.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



3.4 ECONOMIC OUTLOOK

Tasman Region's economy is based on a range of primary commodities. The region's prosperity therefore depends on the prices these commodities can be sold for. The outlook for exports is currently strong, due to the weak \$NZ and the generally healthy economies of New Zealand's major export markets. The rapid recovery of Asian economies from the 1997-98 financial crisis is particularly important to the Tasman Region due to the high proportion of seafood and forestry products sold in these markets. Continuing rapid population growth will bolster domestic demand, thereby aiding industries such as retailing and construction.

4 WEST COAST

4.1 BACKGROUND AND CONTEXT

In 1998 the GDP of West Coast Region's economy was \$831.5 million. Between 1993 and 1998, the region's GDP grew at an annual average rate of 0.7 percent, significantly slower than the national average of 3.5 percent.

West Coast's population is currently around 32,600, but the region is growing slower than the national inter-census average of 1.4 percent. Migration to other South Island regions is the reason for the slow population growth. Major industries in the region include forestry, mining, agriculture and tourism.

The West Coast's dependence on a narrow range of industries makes its economy vulnerable. The current outlook is reasonable, given the strong export environment, with growing international commodity markets and a weak \$NZ. However static population growth and the prospect of native timber logging stopping entirely makes the West Coast's future prospects uncertain.

4.2 POPULATION AND EMPLOYMENT

West Coast Region was home to 32,512 people at the time of the 1996 census, the smallest regional population in the country. Its population grew at an annual average rate of approximately 0.6 percent between the 1991 and 1996 censuses, and is currently estimated at 32,600. It is growing slower than the national population, which grew at 1.4 percent annual average during the inter-census years. Migration to other regions for better employment and educational opportunities is the main reason for the slow growth. Other South Island regions are the major destinations for migrants, particularly Canterbury, Nelson, Marlborough and Tasman.

The population density of the region is the lowest in the country at just 1.4 people per square kilometre, compared to 13.1 nationally. The West Coast is much more rural than most other regions, with only 59.2 percent of the population residing in urban

areas. The median age is 34.5 years, significantly higher than the national average due to migrants generally being in younger age groups.

Employment in West Coast Region in 1998 was about 11,900 FTEs, or 0.8 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 2.2 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 1,620 FTEs, 13.7 percent of the region's total employment.

Fishing and seafood processing businesses employ about 305 FTEs in the West Coast Region. This is about 2.6 percent of the region's total FTEs, and represents 2.9 percent of the industry total. The 78 business units in the industry average 3.9 FTEs each, compared to the national average of 5.0 FTEs nationally.

4.3 ECONOMIC STRUCTURE

West Coast Region's economy generated approximately \$5.3 billion of value-added in 1998. This represents 5.4 percent of New Zealand total. GDP growth has been slower than in the national economy overall, averaging 1.2 percent compared to 3.5 percent for New Zealand.

The major industries on the West Coast are forestry, mining, agriculture and more recently, tourism. Plantation forestry production has increased dramatically in recent years, although harvesting of natural forests has declined rapidly. Gold and coal are the main minerals produced by the mining industry. The industry employs 600 FTEs and generates about \$51 million of the region's GDP. Dairy, sheep and cattle farming are common in low-lying areas, although much of the region is ill-suited to these activities due to poor fertility, rugged terrain and susceptibility to flooding. The tourism industry's significance is reflected in the important economic role of accommodation, restaurants and cafes which contributes 5.3 percent (\$44 million) of the region's GDP.

Table 4.1: Selected West Coast Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	1,620	\$ 78	9.4%
Mining & Quarrying	600	\$ 51	6.2%
Accommodation, Restaurants & Cafes	1,130	\$ 44	5.3%
Forestry & Logging	350	\$ 43	5.2%
Dairy	890	\$ 40	4.8%
Non-metallic Minerals	170	\$ 31	3.7%
<i>Seafood Industry</i>	310	\$ 17	2.0%

The fishing and seafood processing industry in West Coast has an annual output of about \$55.2 million. Relative to the size of the economy, the industry is much more important to West Coast than it is to New Zealand overall.

4.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 4.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$8.3 million in value added, or 48.9 percent of the total West Coast seafood industry value added. Output is around \$23.3 million. The sector employs 130 FTEs, 41.9 percent of total employment in the West Coast seafood industry (Table 4.2).

Fishing in Inland Waters and Fish Farming

Fishing in inland waters and fish farming has a direct impact of \$60,000 in value added, or 0.4 percent of total seafood industry value added in West Coast. Total output is \$340,000. The employment generated by this level of activity is about 10 FTEs (Table 4.2).

Fish and Shellfish Processing

Fish and shellfish processing directly contributes \$8.6 million of value added to the West Coast seafood industry, 50.7 percent of the seafood industry's GDP. Annual processing output is \$31.6 million. The sector employs about 260 FTEs, or 53.1 percent of the total West Coast seafood industry workforce (Table 4.2).

Table 4.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
Output (\$000)	23,260	340	31,590
Value Added (\$000)	8,250	60	8,550
Employment (FTEs)	130	10	170

4.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 4.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 4.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output Impacts</i>			
Type I Multiplier	1.87	1.63	2.08
Type II Multiplier	2.02	1.85	2.28
<i>Value Added Impacts</i>			
Type I Multiplier	1.85	2.47	2.49
Type II Multiplier	2.05	3.00	2.80
<i>Employment Impacts</i>			
Type I Multiplier	1.60	1.13	2.14
Type II Multiplier	1.83	1.18	2.43

Ocean and Coastal Fishing and Fishing Consultants

The majority of output from ocean and coastal fishing and fishing consultants (52.1 percent) goes directly into fish and shellfish processing. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Most of the remaining output is exported directly (Table 4.4).

Table 4.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	12,130	52.1%
Inter-regional and International Exports	10,090	43.4%
Motels, Hotels, Guest Houses, Camps and other Accommodation	311	1.3%
Other	730	3.1%
TOTAL	23,260	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$8.7 million of value added from output of \$23.8 million. This level of activity generates employment equivalent to an additional 110 FTEs (Table 4.7).

Fishing in Inland Waters and Fish Farming

The majority of the output of fishing in inland waters and fish farming (68.5 percent) goes directly to fish and shellfish processing and therefore cannot be included in

multiplier analysis of this section of the industry. Most of the remaining output comprises inter-regional and international exports (Table 4.5).

Table 4.5: Consumption of Fishing in Inland Waters and Fish Farming Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	230	68.5%
Inter-regional and International Exports	100	31.0%
Other	10	2.9%
TOTAL	340	100.0%

The indirect and induced impact of fishing in inland waters and fish farming is estimated at \$120,000, while output totals \$280,000. The employment impact is not large enough to be significant (Table 4.7).

Fish and Shellfish Processing

About 87.9 percent of fish and shellfish processing output goes to inter-regional and international exports. Over \$1.2 million of output (3.8 percent) flows back into the fish and shellfish processing industry itself. Smaller amounts are utilised by the accommodation industry (3.6 percent) restaurants, cafes and other eateries (2.3 percent) (Table 4.6).

Table 2.6: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	27,750	87.9%
Fish and Shellfish Processing	1,210	3.8%
Motels, Hotels, Guest Houses, Camps and other Accommodation	1,140	3.6%
Restaurants, Cafes and other Eating and Drinking Places	730	2.3%
Other	760	2.4%
TOTAL	31,590	100.0%

The indirect and induced economic impacts of fish and shellfish processing total \$15.4 million value added or \$40.3 million of output. The employment impact is 240 FTEs, 50 of which result from induced impacts (Table 4.7).

Table 4.7: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output (\$000)</i>			
Direct	23,260	340	31,590
Indirect	20,130	210	34,260
Induced	3,650	70	6,080
Total	47,040	620	71,930
% of Total Output	1.46%	0.02%	2.24%
<i>Value Added (\$000)</i>			
Direct	8,250	60	8,550
Indirect	7,010	90	12,700
Induced	1,640	30	2,720
Total	16,900	190	23,980
% of Total GDP	2.03%	0.02%	2.88%
<i>Employment (FTEs)</i>			
Direct	130	10	170
Indirect	80	0	190
Induced	30	0	50
Total	230	10	400
% of Total Employment	1.97%	0.12%	3.38%

4.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry. However these impacts are not large enough to be significant in the West Coast region.

4.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the West Coast seafood industry amount to \$41.1 million of value added and 660 FTEs (Table 4.8). The majority (58.4 percent) of the total value added impact is attributable to the fish and shellfish processing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and

shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$24.2 million compared to direct impacts of \$16.9 million. The implied value added multiplier is 2.43. The corresponding employment multiplier is 2.13. These are significantly lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 4.8: Seafood Industry Impact Summary

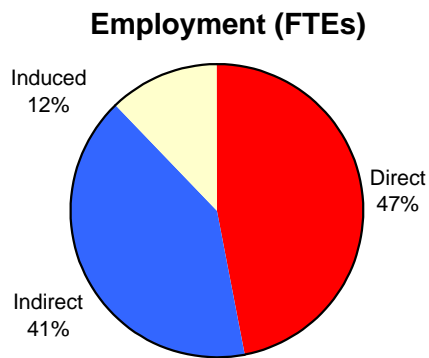
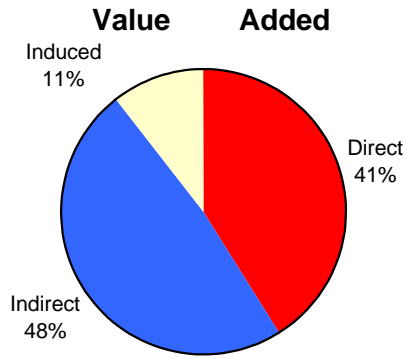
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	TOTAL
<i>Output (\$m)</i>			
Direct	23.6	31.6	55.2
Indirect	20.3	34.3	54.6
Induced	3.7	6.1	9.8
Total	47.7	71.9	119.6
<i>Value Added (\$m)</i>			
Direct	8.3	8.6	16.9
Indirect	7.1	12.7	19.8
Induced	1.7	2.7	4.4
Total	17.1	24.0	41.1
<i>Employment (FTEs)</i>			
Direct	140	170	310
Indirect	80	190	270
Induced	30	50	80
Total	250	410	660

Direct impacts account for 41 percent of total value added impacts and 47 percent of employment impacts (Figure 4.1 overleaf).

Figure 4.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



4.4 ECONOMIC OUTLOOK

The West Coast's narrow economic base and reliance on extractive industries means that its economy depends on commodity prices, perhaps to a greater extent than any other region. The outlook for exports is currently strong, due to the weak \$NZ and the generally healthy economies of New Zealand's major export markets. The rapid recovery of Asian economies from the 1997-98 financial crisis is particularly important to the West Coast Region due to the high proportion of forestry products sold in these markets. Tourism may also be bolstered by the same factors.

There is continuing pressure to halt all native timber logging in the area, which would adversely affect the region's economy. The rapid expansion of plantation forestry supply may offset this somewhat. Weak population growth in the region will hinder the growth of industries such as construction and retail.

5 CANTERBURY

5.1 BACKGROUND AND CONTEXT

In 1998 the GDP of Canterbury Region's economy was \$12.6 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 3.6 percent, slightly faster than the national average of 3.5 percent.

Canterbury's population is currently around 490 000, and the region is the second largest behind Auckland. Between 1991 and 1996 it grew at an annual average rate of 1.3 percent compared to the national inter-census average of 1.4 percent. The median age is higher than average at 34.5 years, and the region is also more ethnically homogenous with Europeans forming 93.1 percent of the population.

Canterbury looks well placed to enjoy the benefits of the strong international economic environment, with a clear export focus and diversified range of industries. However weak population growth may limit the expansion of sectors relying heavily on domestic demand.

5.2 POPULATION AND EMPLOYMENT

Canterbury Region was home to 468,040 people at the time of the 1996 census, the second largest regional population in the country. Its population grew at an annual average rate of approximately 1.3 percent between the 1991 and 1996 censuses, and is now estimated at about 490,000. By 2021 it is forecast to reach 533,000, an annual average growth of just 0.5 percent.

Unlike in the Auckland Region, Canterbury is failing to attract international immigrants. However the national trend towards consolidation of urban areas has seen Christchurch growing at the expense of smaller regional centres such as Timaru, and there has also been substantial migration to Canterbury from Otago and Southland.

The population density is about 10.3 people per square kilometre, somewhat less than New Zealand average but high by South Island standards. The median age is fairly high at 34.5 years, although there is a great deal of variation between centres. Ashburton has the highest median age of 39.6 years, compared to 33.2 in smaller rural centres where agriculture traditionally employs a fairly youthful workforce. 93.1 percent of the population have European ethnicity, 6.8 percent Maori and 1.7 percent Pacific Island.

Employment in Canterbury Region in 1998 was approximately 193,000 FTEs, or 12.9 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 4.0 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. However on a per capita basis this equates to regional growth of 2.3 percent, faster than the national average of 2.1 percent. The wholesale and retail industry is the largest employer, with 32,300 FTEs, 16.6 percent of the region's total employment in 1998. Other large employers include education (14,350 FTEs), health and community services (17,400 FTEs) and sheep, beef and mixed livestock farming (8,940 FTEs).

Fishing and seafood processing businesses employ about 1,500 FTEs in the Canterbury Region. This is about 0.8 percent of the region's total FTEs, and represents a substantial 14.6 percent of the industry total. The 235 business units in the industry average 6.5 FTEs each compared to 5.0 nationally, indicating that the industry in Canterbury is more geared towards large-scale commercial operations than in many other provinces where small owner-operated operations predominate.

5.3 ECONOMIC STRUCTURE

Canterbury Region's economy generated approximately \$12.6 billion of value-added in 1998. This represents 12.8 percent of New Zealand total. GDP growth has been just above that in the national economy overall, averaging 3.6 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis the difference is greater due to Canterbury's slower population growth, the Canterbury Region averaging 2.3 percent compared to 2.1 percent nationally.

Wholesale and retail is the largest single industry in the Canterbury Region, with GDP of \$1.5 billion. Manufacturing has developed faster in recent years, although historically agriculture has predominated. In particular a high-tech electrical engineering manufacturing cluster has developed around companies such as Reid Electronics, so that the region now has around half of New Zealand's electrical engineers.

The status of Christchurch as the economic hub of the South Island is reflected in the higher-order services available there. Business services generate GDP of approximately \$497 million, communications services are close behind with \$480 million. Education is an important industry, with two universities and a polytechnic in Christchurch. The region generates almost a quarter of New Zealand's electricity in hydro schemes based in the Waitaki and Mackenzie basins.

Table 5.1: Selected Canterbury Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	32,030	1,537	12.2%
Business Services	12,150	497	3.9%
Communications Services	3,080	480	3.8%
Construction	12,760	461	3.7%
Finance	2,910	452	3.6%
Education	14,350	427	3.4%
<i>Seafood Industry</i>	<i>1,520</i>	<i>80</i>	<i>0.6%</i>

The seafood industry in Canterbury has an annual output of about \$276.6 million. Relative to the size of the economy, the industry is more important to Canterbury than it is to New Zealand overall.

5.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 5.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$23.8 million in value added, or 29.6 percent of total Canterbury seafood industry value added. Output is approximately \$67.1 million. The sector employs about 370 FTEs in Canterbury, 24.3 percent of total employment in the Canterbury seafood industry (Table 5.2).

Fishing in Inland Waters and Fish Farming

Fishing in inland waters and fish farming has a direct impact of \$330,000 in value added, or 0.6 percent of total seafood industry value added in Canterbury. Total output is \$1.8 million. Employment is about 60 FTEs, or 3.9 percent of total Canterbury seafood industry employment (Table 5.2).

Fish and Shellfish Processing

Fish and shellfish processing contributes \$56.3 million of value added to the Canterbury seafood industry, about 70.0 percent of total industry GDP. Annual processing output is \$207.7 million, and the sector employs about 1,090 FTEs (Table 5.2).

Table 5.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
Output (\$000)	67,050	1,760	207,740
Value Added (\$000)	23,790	330	56,250
Employment (FTEs)	370	60	1,090

5.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 5.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 5.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output Impacts</i>			
Type I Multiplier	2.05	2.29	2.19
Type II Multiplier	2.39	2.77	2.54
<i>Value Added Impacts</i>			
Type I Multiplier	2.43	4.03	2.88
Type II Multiplier	2.84	5.14	3.45
<i>Employment Impacts</i>			
Type I Multiplier	1.96	1.26	2.36
Type II Multiplier	2.44	1.36	2.88

Ocean and Coastal Fishing and Fishing Consultants

The majority of output from ocean and coastal fishing and fishing consultants (92.0 percent) goes directly into fish and shellfish processing. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Most of the remaining output consumed by the fruit and vegetable and accommodation industries (4.4 percent and 2.0 percent of output respectively) (Table 5.4).

Table 5.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	61,670	92.0%
Fruit and Vegetable Processing	2,980	4.4%
Motels, Hotels, Guest Houses, Camps and other Accommodation	1,310	2.0%
Other	1,100	1.6%
TOTAL	67,050	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$43.8 million of value added, from output of \$93.2 million. This level of activity generates employment equivalent to an additional 530 FTEs (Table 5.7).

Fishing in Inland Waters and Fish Farming

A large portion (44.7 percent) of the output of fishing in inland waters and fish farming goes directly to fish and shellfish processing and therefore cannot be included in multiplier analysis of this section of the industry. The remaining output is almost entirely consumed by inter-regional or international exports, with just 1.0 percent consumed by other industries (Table 5.5).

Table 5.5: Consumption of Fishing in Inland Waters and Fish Farming Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	960	54.2%
Fish and Shellfish Processing	790	44.7%
Other	10	1.0%
TOTAL	1,760	100.0%

The indirect impact is estimated at some \$17.2 million. An additional \$7.6 million is generated by the induced impact, for a total of \$24.8 million value added. The employment impact is an additional 380 FTEs (Table 5.7).

Fish and Shellfish Processing

About 73.6 percent of fish and shellfish processing output is exported immediately, either internationally or to other regions. The cropping industry consumes 8.0 percent and a further 5.4 percent of output goes to restaurants, cafes and other eateries. About \$7.9 million of output (3.8 percent) flows back into the fish and shellfish processing industry itself. The accommodation industry also consumes 3.0 percent of output (Table 5.6).

Table 5.6: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	152,920	73.6%
Cropping	18,380	8.8%
Restaurants, Cafes and other Eating and Drinking Places	11,280	5.4%
Fish and Shellfish Processing	7,930	3.8%
Motels, Hotels, Guest Houses, Camps and other Accommodation	6,240	3.0%
Other	10,990	5.3%
TOTAL	207,740	100.0%

The indirect and induced economic impacts of fish and shellfish processing in Canterbury are large, totalling \$137.7 million of value added from output of \$320.3 million. The employment impact is 2,040 FTEs, 560 of which result from induced impacts (Table 5.7).

Table 5.7: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output (\$000)</i>			
Direct	67,050	1,760	207,740
Indirect	70,290	2,280	246,870
Induced	22,930	840	73,420
Total	160,270	4,880	528,030
% of Total Output	0.36%	0.01%	1.20%
<i>Value Added (\$000)</i>			
Direct	23,790	330	56,250
Indirect	33,940	990	105,840
Induced	9,940	360	31,820
Total	67,670	1,680	193,910
% of Total GDP	0.54%	0.01%	1.54%
<i>Employment (FTEs)</i>			
Direct	370	60	1,090
Indirect	360	20	1,480
Induced	170	10	560
Total	900	90	3,120
% of Total Employment	0.47%	0.04%	1.62%

5.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and

shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry.

The only significant forward linkage of the fishing sector of the seafood industry not already captured by fish and shellfish processing occurs in the fruit and vegetable processing industry. Approximately 2.4 percent (\$3.0 million) of the fruit and vegetable industry's output is directly attributable to activity in the fishing sector of the seafood industry. This equates to almost \$650,000 of value added (Table 5.8).

Table 5.8: Major Direct Impacts of Fishing on Other Industries

Source: McDermott Fairgray Group Ltd.

	Fruit and Vegetable Processing
Output (\$000)	124,560
Value Added (\$000)	27,370
Employment (FTEs)	720
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	2,980
Value Added (\$000)	650
Employment (FTEs)	20

The indirect and induced impacts on value added resulting from the share of fruit and vegetable processing attributable to the seafood industry amount to \$1.7 million of value added, or \$4.9 million output. This level of activity sustains employment for some 40 FTEs (Table 5.9).

Table 5.9: Major Output, Value Added and Employment Impacts on Other Industries

Source: McDermott Fairgray Group Ltd.

Fruit and Vegetable Processing	
<i>Output (\$000s)</i>	
Direct	2,980
Indirect	3,770
Induced	1,160
Total	7,910
<hr/>	
% of Total Output	0.02%
<hr/>	
<i>Value Added (\$000s)</i>	
Direct	650
Indirect	1,300
Induced	420
Total	2,370
<hr/>	
% of Total GDP	0.02%
<hr/>	
<i>Employment (FTEs)</i>	
Direct	20
Indirect	30
Induced	10
Total	60
<hr/>	
% of Total Employment	0.03%

A small portion of the output of the fish and shellfish processing industry also has forward linkages, although most is consumed as final demand. About 2.6 percent (\$18.4 million) of cropping industry output is attributable to the processing sector of the seafood industry. The direct economic impact is value added of \$7.6 million and 40 FTEs (Table 5.10).

Table 5.10: Major Direct Impacts of Fish and Shellfish Processing Flow-on Industries

Source: McDermott Fairgray Group Ltd.

Cropping	
Output (\$000)	708,940
Value Added (\$000)	293,560
Employment (FTEs)	1,480
<hr/>	
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	18,380
Value Added (\$000)	7,610
Employment (FTEs)	40

The indirect and induced economic impacts attributable to the seafood industry total \$9.9 million of value added and 170 FTEs, or 0.1 percent of total Canterbury region value added and employment (Table 5.11).

Table 5.11: Fish and Shellfish Processing Flow-on Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

Cropping	
<i>Output (\$000s)</i>	
Direct	18,380
Indirect	18,660
Induced	4,560
Total	41,590
% of Total Output	0.1%
<i>Value Added (\$000s)</i>	
Direct	7,610
Indirect	7,900
Induced	1,970
Total	17,490
% of Total GDP	0.1%
<i>Employment</i>	
Direct	40
Indirect	140
Induced	30
Total	210
% of Total Employment	0.1%

5.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Canterbury seafood industry amount to \$286.2 million of value added and 4,430 FTEs (Table 5.12). About 67.8 percent of the total value added impact is attributable to the processing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$196.7 million compared to direct impacts of \$89.5 million. The implied value added multiplier is 3.20. The corresponding employment multiplier is 2.79. These are slightly larger than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 5.12: Seafood Industry Impact Summary

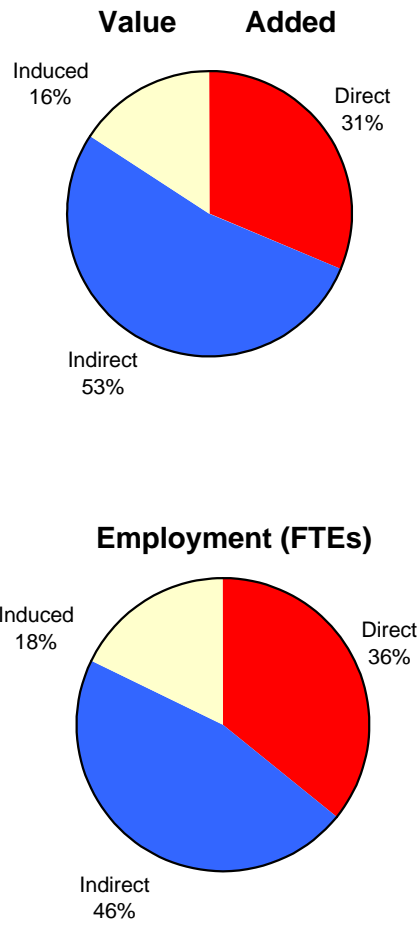
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	68.8	207.7	24.8	301.3
Indirect	72.6	246.9	26.7	346.2
Induced	23.8	73.4	7.0	104.2
Total	165.2	528.0	58.5	751.7
<i>Value Added (\$m)</i>				
Direct	24.1	56.3	9.1	89.5
Indirect	34.9	105.8	10.9	151.7
Induced	10.3	31.8	2.9	45.1
Total	69.4	193.9	22.9	286.2
<i>Employment (FTEs)</i>				
Direct	430	1,090	70	1,590
Indirect	380	1,480	190	2,050
Induced	180	560	50	790
Total	990	3,130	310	4,430

Direct impacts account for 31 percent of total value added impacts and 36 percent of employment impacts (Figure 5.1 overleaf).

Figure 5.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



5.4 ECONOMIC OUTLOOK

The economic outlook for the Canterbury Region seems positive. The region's strong export focus means that its economic fortunes respond quickly to conditions in principal export markets. These conditions are currently favourable, with the south-east Asian economies rebounding from the 1997-98 financial crisis and continued strong growth in Australia and the United States. The weak \$NZ also bolsters export demand.

The region also has a range of industries that is well diversified by New Zealand standards, with higher than average components of higher order service and manufacturing industries. This reduces the risk of sector-specific economic shocks impacting disproportionately on the regional economy overall.

Although the general economic outlook for the Canterbury Region is strong, sectors such as construction and retail trade may not fare as well due to the modest population growth forecast in the region.

5.4.1 CHATHAM ISLANDS

Although the Chatham Islands TLA is not actually part of Canterbury Region, significant fisheries operations occur there. This section examines the economic impacts of the seafood industry in the Chatham Islands.

The seafood industry is the Chatham Islands' largest industry. Its direct impact is \$10.3 million of value added, or 41.3 percent of total Chatham Islands' GDP. The industry employs 170 FTEs, of which 76.5 percent (130) are engaged in fishing operations. The indirect and induced impacts total a further \$8.6 million of value added and 100 FTEs (Table 5.13).

Table 5.13: Seafood Industry Impact Summary

Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	TOTAL
<i>Output (\$m)</i>			
Direct	24.0	6.7	30.7
Indirect	18.2	6.2	24.4
Induced	1.3	0.5	1.8
Total	43.5	13.4	56.8
<i>Value Added (\$m)</i>			
Direct	8.5	1.8	10.3
Indirect	5.6	2.2	7.7
Induced	0.6	0.2	0.9
Total	14.7	4.2	18.9
<i>Employment (FTEs)</i>			
Direct	130	40	170
Indirect	60	30	90
Induced	10	0	10
Total	200	70	270

6 OTAGO

6.1 BACKGROUND AND CONTEXT

In 1998 the GDP of Otago Region's economy was \$4.4 billion. Between 1993 and 1998, the region's GDP grew by an annual average rate of about 2.2 percent compared to the national average of 3.5 percent growth.

Otago's population is currently around 185,000. Between 1991 and 1996 the region's population grew at an annual average rate of 0.8 percent compared to the national inter-census average of 1.4 percent. There is a high proportion of 15-24 year olds in the region, due the several large tertiary institutions in Dunedin. Intra-regional population growth varies greatly, with the Queenstown-Lakes District by far the fastest growing.

Otago's economic outlook is positive, with two of the region's three major industries enjoying favourable conditions. This should lessen the impact of falling tertiary enrolments. Although population growth overall is fairly stagnant, the rapid growth of Queenstown should assist industries such as construction and retail.

6.2 POPULATION AND EMPLOYMENT

Otago Region was home to 185,083 people at the time of the 1996 census, the second largest South Island regional population behind Canterbury. The population grew at an annual average rate of 0.8 percent between the 1991 and 1996 censuses, and is now estimated at about 187,500. Growth is expected to slow even further. By 2021 it is forecast to reach 192,600, an annual average growth of just 0.2 percent.

Rates of population growth contrast starkly across the region. The rural Waitaki, Central Otago and Clutha districts are slowly losing population, while the Queenstown-Lakes District is experiencing extremely rapid population growth of 43.1 percent between 1991 and 1996. Dunedin City sits in between, gaining population but only

slowly. Overall, the region lost population as migrants moved north to regions such as Canterbury and Wellington, but gained population from Southland.

The population is slightly more rural than the national average, with 80.3 percent living in urban areas, reflecting the importance of agriculture in the region. However stark contrasts are again evident, with the majority of the Clutha and Central Otago districts being rural, while Dunedin City is overwhelmingly urban. The region has an unusually high numbers of 15-24 year olds, due to the several large tertiary institutions in Dunedin City.

Employment in Otago Region in 1998 was approximately 70,000 FTEs, or 4.7 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 2.3 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. Wholesale and retail trade is the largest employer, with 10,300 FTEs, 14.6 percent of the region's total employment. Other large employers include education (6,760 FTEs), accommodation, restaurants and cafes (5040 FTEs) and sheep, beef and mixed livestock (4,770 FTEs).

Fishing and seafood processing businesses employed about 420 FTEs in the Otago Region in 1998. This is about 0.6 percent of the region's total FTEs, and represents 4.1 percent of the industry total. The 99 business units in the industry average 4.3 FTEs each compared to 5.0 nationally.

6.3 ECONOMIC STRUCTURE

Otago Region's economy generated approximately \$4.4 billion of value-added in 1998. This represents 4.4 percent of New Zealand total. GDP grew at an annual average of 2.2 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis the difference is slightly less due to Otago's relatively slow population growth, the region averaging 1.3 percent compared to 2.1 percent nationally.

The education industry in Otago contributes almost \$200 million to the region's GDP. The major players in the industry are Otago University, the teacher's college and the polytechnic. The tourism industry is now very important to the region's economy, contributing approximately the same amount of GDP as the region's more traditional

mainstay, sheep, beef and mixed livestock farming. Fruit growing and winemaking are significant industries in suitable Central Otago micro-climates. Otago is also a nationally significant energy producer, with two major hydro-electric facilities on the Clutha River (the Clyde and Roxburgh dams) and coal production in excess of 50,000 tonnes annually.

Table 6.1: Selected Otago Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	10,250	492	11.3%
Education	6,760	199	4.6%
Sheep, Beef & Mixed Livestock	4,770	182	4.2%
Accommodation, Restaurants & Cafes	5,040	182	4.2%
Electricity Generation & Distribution	490	142	3.3%
<i>Seafood Industry</i>	420	23	0.5%

The fishing and seafood processing industry in Otago has an annual output of about \$78.8 million. Relative to the size of the economy, the industry is of about the same importance to Otago as it is to New Zealand overall.

6.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 6.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$8.8 million in value added, or 37.4 percent of the total Otago seafood industry value added. Output is around \$24.7 million. The sector employs 140 FTEs, 32.6 percent of total employment in the Otago seafood industry (Table 6.2).

Fishing in Inland Waters and Fish Farming

Fishing in inland waters and fish farming has a direct impact of just \$30,000 in value added, or 0.1 percent of total seafood industry value added in Otago. Total output is

\$140,000. The employment generated by this level of activity is about 10 FTEs (Table 6.2).

Fish and Shellfish Processing

Fish and shellfish processing directly contributes \$14.6 million of value added to the Otago seafood industry, 62.4 percent of the seafood industry's GDP. Annual processing output is \$54.0 million. The sector employs about 280 FTEs, or 65.1 percent of the total Otago seafood industry workforce (Table 6.2).

Table 6.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
Output (\$000)	24,710	140	53,990
Value Added (\$000)	8,770	30	14,620
Employment (FTEs)	140	10	280

6.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 6.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 6.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output Impacts</i>			
Type I Multiplier	1.65	1.90	1.88
Type II Multiplier	1.90	2.24	2.13
<i>Value Added Impacts</i>			
Type I Multiplier	2.35	3.26	2.56
Type II Multiplier	2.66	4.05	2.97
<i>Employment Impacts</i>			
Type I Multiplier	1.72	1.19	2.06
Type II Multiplier	2.08	1.26	2.44

Ocean and Coastal Fishing and Fishing Consultants

The majority of output from ocean and coastal fishing and fishing consultants (65.7 percent) goes directly into fish and shellfish processing. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Most of the remaining output is exported either internationally or inter-regionally. The accommodation industry consumes a further 3.5 percent, fruit and vegetable processing 1.5 percent and restaurants, cafes and eateries 1.0 percent (Table 6.4).

Table 6.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Fish and Shellfish Processing	16,250	65.7%
Inter-regional and International Exports	6,140	24.8%
Motels, Hotels, Guest Houses, Camps and other Accommodation	860	3.5%
Fruit and Vegetable Processing	380	1.5%
Restaurants, Cafes and other Eating and Drinking Places	240	1.0%
Other	840	3.4%
TOTAL	24,710	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$14.6 million of value added from output totalling \$22.3 million. This level of activity generates employment equivalent to an additional 150 FTEs (Table 6.7).

Fishing in Inland Waters and Fish Farming

A large part of the output of fishing in inland waters and fish farming (32.0 percent) goes directly to fish and shellfish processing and therefore cannot be included in multiplier analysis of this section of the industry. Almost all the remaining 68.0 percent goes to inter-regional and international exports (Table 6.5).

Table 6.5: Consumption of Fishing in Inland Waters and Fish Farming Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	90	67.0%
Fish and Shellfish Processing	40	32.0%
Other	10	1.0%
TOTAL	140	100.0%

The indirect and induced impact is an estimated \$80,000 contribution to the Otago region's GDP. Indirect and induced output totals \$180,000. The employment impact is insignificant (Table 6.7).

Fish and Shellfish Processing

About 70.8 percent of fish and shellfish processing output is exported either internationally or inter-regionally. Part of the remaining output flows back into the fish and shellfish processing industry itself (3.8 percent). Other industries which are major consumers of fish and shellfish processing output include restaurants, cafes and other eateries (8.3 percent), accommodation (7.5 percent) and cropping (2.3 percent) (Table 6.6).

Table 6.6: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	38,240	70.8%
Restaurants, Cafes and other Eating and Drinking Places	4,500	8.3%
Motels, Hotels, Guest Houses, Camps and other Accommodation	4,050	7.5%
Fish and Shellfish Processing	2,060	3.8%
Cropping	1,240	2.3%
Other	3,900	7.2%
TOTAL	53,990	100.0%

The indirect and induced economic impacts of fish and shellfish processing are substantial, totalling \$28.8 million value added. The employment impact is 410 FTEs, 110 of which result from induced impacts (Table 6.7).

Table 6.7: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output (\$000)</i>			
Direct	24,710	140	53,990
Indirect	16,140	130	47,710
Induced	6,170	50	13,480
Total	47,020	310	115,180
% of Total Output	0.30%	0.00%	0.73%
<i>Value Added (\$000)</i>			
Direct	8,770	30	14,620
Indirect	11,870	60	22,870
Induced	2,720	20	5,940
Total	23,360	110	43,430
% of Total GDP	0.53%	0.00%	0.99%
<i>Employment (FTEs)</i>			
Direct	140	10	280
Indirect	100	0	300
Induced	50	0	110
Total	280	10	690
% of Total Employment	0.40%	0.01%	0.98%

6.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry. However in Otago none of these forward linkage impacts are large enough to be significant.

Part of the output of the fish and shellfish processing industry also has forward linkages, although most is consumed as final demand. About 2.6 percent (\$1.2 million) of cropping industry output is attributable inputs from the processing sector of the seafood industry. The direct economic impact is value added of \$520,000, although the number of additional FTEs is not significant (Table 6.8).

Table 6.8: Major Direct Impacts of Fish and Shellfish Processing Flow-on Industries

Source: McDermott Fairgray Group Ltd.

Cropping	
Output (\$000)	48,000
Value Added (\$000)	19,880
Employment (FTEs)	100
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	1,240
Value Added (\$000)	520
Employment (FTEs)	0

The indirect and induced economic impacts of fish and shellfish industry flow-on effects total \$560,000 of value added from output of \$1.3 million. About 10 FTEs are generated by indirect impacts (Table 6.9).

Table 6.9: Fish and Shellfish Processing Flow-on Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

Cropping	
<i>Output (\$000s)</i>	
Direct	1,240
Indirect	1,050
Induced	230
Total	2,530
% of Total Output	0.02%
<i>Value Added (\$000s)</i>	
Direct	520
Indirect	460
Induced	100
Total	1,080
% of Total GDP	0.02%
<i>Employment</i>	
Direct	0
Indirect	10
Induced	0
Total	10
% of Total Employment	0.02%

6.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Otago seafood industry amount to \$68.0 million of value added and 1,000 FTEs (Table 6.10). The majority (63.9 percent) of the total value added impact is attributable to the fish and shellfish processing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$44.0 million compared to direct impacts of \$23.9 million. The implied value added multiplier is 2.84. The corresponding employment multiplier is 2.33. These are somewhat lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 6.10: Seafood Industry Impact Summary

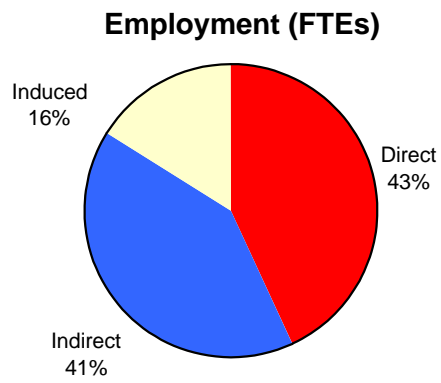
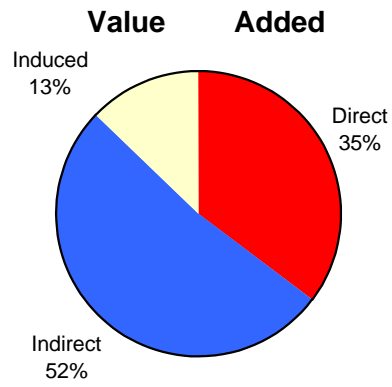
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	24.9	54.0	1.2	80.1
Indirect	16.3	47.7	1.1	65.0
Induced	6.2	13.5	0.2	19.9
Total	47.3	115.2	2.5	165.0
<i>Value Added (\$m)</i>				
Direct	8.8	14.6	0.5	23.9
Indirect	11.9	22.9	0.5	35.3
Induced	2.7	5.9	0.1	8.8
Total	23.5	43.4	1.1	68.0
<i>Employment (FTEs)</i>				
Direct	150	280	0	430
Indirect	100	300	10	410
Induced	50	110	0	160
Total	300	690	10	1,000

Direct impacts account for 35 percent of total value added impacts and 43 percent of employment impacts (Figure 6.1 overleaf).

Figure 6.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



6.4 ECONOMIC OUTLOOK

The Otago economy is reasonably resilient, relying as it does on three quite different industries, education, agriculture and tourism. The agricultural industry in the region should benefit from the weak \$NZ spurring export demand, and from the positive international economic environment. The same factors will benefit the tourism industry, which has grown strongly in recent years. These industries should drive the regional economy in coming years.

The outlook for the education may not be quite so positive. Tertiary institutions around the country are suffering from falling enrolments as numbers of school-leavers diminish, with the exception of the rapidly growing Auckland Region. However the strong reputations of the Otago tertiary institutions may help maintain demand, as significant numbers of students from outside the region are attracted to attend.

7 SOUTHLAND

7.1 BACKGROUND AND CONTEXT

In 1998 the GDP of Southland Region's economy was \$2.6 billion. Between 1993 and 1998, the region's GDP grew by an annual average rate of about 2.0 percent, compared to the national average of 3.5 percent growth.

Southland's population is currently around 94,000, and the region was the only region other than Taranaki to lose population in the inter-census years. Between 1991 and 1996 it grew at an annual average rate of –0.6 percent compared to the national inter-census average of 1.4 percent. With migration to the north expected to continue, by 2021 the population is projected to be just 75,800. As a result, the region has proportionally few young adults.

There are encouraging signs for Southland's economy, with the current economic environment well suited for commodity exports. Furthermore, on a per capita basis the region has enjoyed strong employment growth. However a lack of genuine economic diversity and the rapidly dwindling population may hinder the region's future prosperity.

7.2 POPULATION AND EMPLOYMENT

Southland Region was home to 97,100 people at the time of the 1996 census. Its population actually declined at an annual average rate of –0.6 percent between the 1991 and 1996 censuses, and is now estimated at about 94,000. By 2021 it is forecast to have shrunk to 75,800, an annual average growth of –1.0 percent.

The region is failing to attract immigrants, and is suffering from the national trend towards consolidation of urban areas which has seen major centres, particularly Auckland, growing at the expense of smaller regional centres. The majority of migrants are leaving for Otago and Canterbury, for better tertiary education and employment opportunities.

The population is older than the national average, with a median age of 33.7 years. Older age groups have been increasing in proportion to the rest of the population as it is predominantly younger people leaving in search of better opportunities elsewhere. The proportion of people in the 15-24 years age group is significantly lower than nationally. Although the region is 94 percent European in ethnicity, it has the highest proportion of Maori in the South Island (11.3 percent identifying with Maori ethnicity).

Employment in Southland Region in 1998 was approximately 40,000 FTEs, or 2.7 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 2.0 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. Wholesale and retail trade is the largest employer, with 5,500 FTEs, 13.7 percent of the region's total employment. Other large employers include sheep, beef and mixed livestock farming (5,820 FTEs), meat and meat products manufacturing (3,280 FTEs) and basic metal industries (1,100 FTEs).

Fishing and seafood processing businesses employed about 537 FTEs in the Southland Region in 1998. This is about 1.3 percent of the region's total FTEs, and represents just 5.2 percent of the industry total. The 193 business units in the industry average 2.8 FTEs each compared to 5.0 nationally.

7.3 ECONOMIC STRUCTURE

Southland Region's economy generated approximately \$2.6 billion of value-added in 1998. This represents 2.7 percent of New Zealand total. GDP grew at an annual average of 2.0 percent compared to 3.5 percent for New Zealand between 1993 and 1998. However due to Southland's population decline, on a per capita basis its GDP actually grew faster, at 2.6 percent annual average compared to 2.1 percent nationally.

The Southland economy is based on agriculture, with 20.4 percent of the region's employment dependent on the industry, more than double the national average (8.9 percent). Sheep have traditionally been the favoured stock, although in recent years the industry has diversified and significant dairy, beef and deer farming now exists. The region has several large freezing works. Southland has the highest proportion of people in manufacturing industries, mainly due to a few large enterprises such as the

Tiwai Point aluminium smelter and the Mataura paper mill. The region also has New Zealand's largest hydro-electric power station at Manapouri.

Table 7.1: Selected Southland Industries

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	5,500	264	10.1%
Sheep, Beef & Mixed Livestock	5,820	228	8.8%
Meat and Meat Products Manufacturing	3,280	174	6.6%
Basic Metal Industries	1,100	115	4.4%
Construction	2,390	87	3.3%
<i>Seafood Industry</i>	<i>540</i>	<i>31</i>	<i>1.2%</i>

The fishing and seafood processing industry in Southland has an annual output of about \$93.7 million. Relative to the size of the economy, the industry is much more important to Southland than it is to New Zealand overall. The port at Bluff is home to the fishing fleet which works the Foveaux Strait oyster beds. Other major commercially harvested species are blue cod and crayfish. Salmon and mussel farming industries also exist.

7.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS

The direct impact of the seafood industry is obtained by measuring the additional business activity in terms of value added and employment that is generated solely by the seafood industry. The industry comprises ocean and coastal fishing and fishing consultants, fishing in inland waters and fish farming and fish and shellfish processing. Results are summarised in Table 7.2.

Ocean and Coastal Fishing and Fishing Consultants

The direct impact of ocean and coastal fishing and fishing consultants is \$24.4 million in value added, or 78.6 percent of the total Southland seafood industry value added. Output is around \$68.9 million. The sector employs 380 FTEs, 70.4 percent of total employment in the Southland seafood industry (Table 7.2).

Fishing in Inland Waters and Fish Farming

Fishing in inland waters and fish farming has a direct impact of \$170,000 in value added, or 0.5 percent of total seafood industry value added in Southland. Total output is \$920,000. The employment generated by this level of activity is about 30 FTEs (Table 7.2).

Fish and Shellfish Processing

Fish and shellfish processing directly contributes \$6.5 million of value added to the Southland seafood industry, 20.8 percent of the seafood industry's GDP. Annual processing output is \$23.9 million. The sector employs about 130 FTEs, or 24.1 percent of the total Southland seafood industry workforce (Table 7.2).

Table 7.2: Direct Impacts of Seafood Industry

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
Output (\$000)	68,870	920	23,930
Value Added (\$000)	24,440	170	6,480
Employment (FTEs)	380	30	125

7.3.2 SEAFOOD INDUSTRY MULTIPLIER IMPACTS

In addition to the direct economic impact, the seafood industry also generates indirect and induced impacts. **Indirect impacts** arise because businesses servicing the seafood industry require goods, materials and services from other businesses. **Induced impacts** are generated by the additional economic activity associated with spending by people employed in businesses impacted either directly or indirectly by the seafood industry. The direct and indirect impacts generate wages and salaries for these people, and therefore sustains their household spending throughout the economy.

This section analyses the indirect and induced value added and employment effects of the backward linkages that exist between the seafood industry and other industries in the economy. Table 7.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

Table 7.3: Seafood Industry Multipliers

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output Impacts</i>			
Type I Multiplier	1.75	1.96	2.04
Type II Multiplier	1.96	2.25	2.28
<i>Value Added Impacts</i>			
Type I Multiplier	2.29	3.21	2.76
Type II Multiplier	2.55	3.90	3.15
<i>Employment Impacts</i>			
Type I Multiplier	1.72	1.18	2.20
Type II Multiplier	2.03	1.24	2.55

Ocean and Coastal Fishing and Fishing Consultants

Part of output from ocean and coastal fishing and fishing consultants (13.3 percent) goes directly into fish and shellfish processing. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Most of the remaining output is exported directly (Table 7.4).

Table 7.4: Consumption of Ocean and Coastal Fishing and Fishing Consultants' Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	55,930	81.2%
Fish and Shellfish Processing	9,190	13.3%
Other	3,750	5.4%
TOTAL	68,870	100.0%

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$37.9 million of value added. This level of activity generates employment equivalent to an additional 390 FTEs (Table 7.7).

Fishing in Inland Waters and Fish Farming

A significant part of the output of fishing in inland waters and fish farming (18.9 percent) goes directly to fish and shellfish processing and therefore cannot be included in

multiplier analysis of this section of the industry. Almost all the remaining output is exported inter-regionally and internationally (Table 7.5).

Table 7.5: Consumption of Fishing in Inland Waters and Fish Farming Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	740	80.7%
Fish and Shellfish Processing	170	18.9%
Other	10	0.5%
TOTAL	920	100.0%

The indirect and induced impact is an estimated \$500,000 contribution to the Southland region's GDP. Indirect and induced output totals \$1.2 million. The employment impact is an additional 10 FTEs (Table 7.7).

Fish and Shellfish Processing

About 72.5 percent of fish and shellfish processing output is exported either internationally or inter-regionally. Part of the remaining output flows back into the fish and shellfish processing industry itself (3.1 percent). Other industries which are major consumers of fish and shellfish processing output include restaurants, cafes and other eateries (6.3 percent), accommodation (4.9 percent) and cropping (4.3 percent) (Table 7.6).

Table 7.6: Consumption of Fish and Shellfish Processing Output

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	17,360	72.5%
Restaurants, Cafes and other Eating and Drinking Places	1,500	6.3%
Motels, Hotels, Guest Houses, Camps and other Accommodation	1,170	4.9%
Cropping	1,020	4.3%
Fish and Shellfish Processing	740	3.1%
Prepared Animal Feeds	230	1.0%
Other	1,910	8.0%
TOTAL	23,930	100.0%

The indirect and induced economic impacts of fish and shellfish processing are about \$13.9 million value added. The employment impact is of this is 190 FTEs, 40 of which result from induced impacts (Table 7.7).

Table 7.7: Seafood Industry Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

	Ocean and Coastal Fishing and Fishing Consultants	Fishing in Inland Waters and Fish Farming	Fish and Shellfish Processing
<i>Output (\$000)</i>			
Direct	68,870	920	23,930
Indirect	51,390	880	24,920
Induced	15,020	270	5,710
Total	135,280	2,070	54,570
% of Total Output	1.34%	0.02%	0.54%
<i>Value Added (\$000)</i>			
Direct	24,440	170	6,480
Indirect	31,410	380	11,410
Induced	6,580	120	2,500
Total	62,440	670	20,390
% of Total GDP	2.39%	0.03%	0.78%
<i>Employment (FTEs)</i>			
Direct	380	30	130
Indirect	270	10	150
Induced	120	0	40
Total	770	40	320
% of Total Employment	1.92%	0.10%	0.80%

7.3.3 FORWARD LINKAGES

A small portion of fishing sector output (comprising ocean and coastal fishing and fishing consultants, and fishing in inland waters and fish farming, but not fish and shellfish processing) is consumed neither as final demand nor flows on to fish and shellfish processing. This portion has direct, indirect and induced impacts which must also be examined in order to fully capture the total economic impact of the seafood industry. However in Southland none of these forward linkage impacts are large enough to be significant.

Part of the output of the fish and shellfish processing industry also has forward linkages, although most is consumed as final demand. About 2.1 percent (\$1.0 million) of cropping industry output is attributable inputs from the processing sector of the seafood industry. The direct economic impact is value added of \$420,000, although the number of additional FTEs is not significant (Table 7.8).

Table 7.8: Major Direct Impacts of Fish and Shellfish Processing Flow-on Industries

Source: McDermott Fairgray Group Ltd.

Cropping	
Output (\$000)	48,480
Value Added (\$000)	20,070
Employment (FTEs)	100
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	1,030
Value Added (\$000)	420
Employment (FTEs)	0

The indirect and induced economic impacts of fish and shellfish industry flow-on effects total \$470,000 of value added from output of \$1.1 million. About 10 FTEs are generated by indirect impacts (Table 7.9).

Table 7.9: Fish and Shellfish Processing Flow-on Output, Value Added and Employment Impacts

Source: McDermott Fairgray Group Ltd.

Cropping	
<i>Output (\$000s)</i>	
Direct	1,030
Indirect	900
Induced	170
Total	2,100
% of Total Output	0.02%
<i>Value Added (\$000s)</i>	
Direct	420
Indirect	390
Induced	80
Total	890
% of Total GDP	0.03%
<i>Employment</i>	
Direct	0
Indirect	10
Induced	0
Total	10
% of Total Employment	0.03%

7.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Southland seafood industry amount to \$84.4 million of value added and 1,140 FTEs (Table 7.10). The majority (74.8 percent) of the total value added impact is attributable to the fishing sector of the industry. However it is important to note that the indirect and induced impacts of the fishing sector are understated due to their 'downstream' inclusion in the fish and shellfish processing impact. These impacts are netted out of the fishing sector in order to avoid double-counting for the seafood industry as a whole.

Indirect and induced value added impacts total \$52.9 million compared to direct impacts of \$31.5 million. The implied value added multiplier is 2.68. The corresponding employment multiplier is 2.11. These are somewhat lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

Table 7.10: Seafood Industry Impact Summary

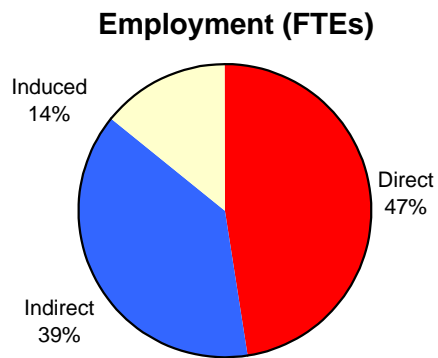
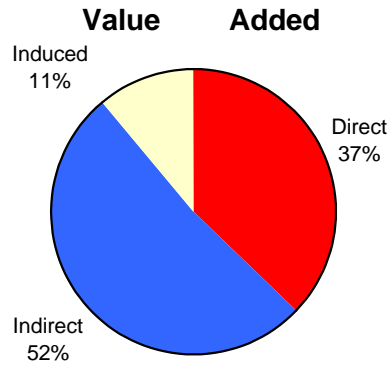
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	69.8	23.9	1.0	94.7
Indirect	52.3	24.9	0.9	78.1
Induced	15.3	5.7	0.2	21.2
Total	137.4	54.6	2.1	194.0
<i>Value Added (\$m)</i>				
Direct	24.6	6.5	0.4	31.5
Indirect	31.8	11.4	0.4	43.6
Induced	6.7	2.5	0.1	9.3
Total	63.1	20.4	0.9	84.4
<i>Employment (FTEs)</i>				
Direct	410	130	0	540
Indirect	280	150	10	440
Induced	120	40	0	160
Total	810	320	10	1,140

Direct impacts account for 37 percent of total value added impacts and 47 percent of employment impacts (Figure 7.1 overleaf).

Figure 7.1: Direct, Indirect and Induced Value Added and Employment

Source: McDermott Fairgray Group



7.4 ECONOMIC OUTLOOK

Like many of New Zealand's more rural regions, Southland's economic prosperity depends to a large extent on agricultural commodity prices. The current outlook is therefore encouraging, because of the low value of the \$NZ and the strong economies of most of New Zealand's major trading partners stimulating export demand. Although the region's manufacturing industries add another string to the economy's bow, they are predominantly primary commodity processing industries, so the degree of diversification they provide is not great. For this reason, and because of the region's precipitous population decline, economic growth in the region may be fragile.