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The New Zealand Seafood Industry Council

Economic Impact Assessment for  
New Zealand Regions

APPENDIX ONE:  
Detailed Regional Impacts  
NORTH ISLAND

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By  
McDermott Fairgray Group Ltd

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**McDermott Fairgray Group Limited      May 2000**

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# **APPENDIX ONE**

## **1 NORTHLAND**

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### **1.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Northland Region's economy was \$3.3 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 4.8 percent, considerably faster than the national average of 3.5 percent.

Northland's population is currently around 137,000 and growing somewhat faster than the national average of 1.4 percent. High birth rates among the large Maori population are partly responsible. The major industries in the region include petroleum refining, dairy farming, forestry and tourism. Wholesale and retail trade is the largest employer, with 6,890 employees.

The economic outlook for Northland is for continued moderately strong growth. However, a narrow economic base means that the region's economy remains highly susceptible to economic shocks such as falling international commodity prices or reduced domestic demand for oil.

### **1.2 POPULATION AND EMPLOYMENT**

Northland Region was home to 137,052 people at the time of the 1996 census. Its population grew at an annual average rate of approximately 1.7 percent between the 1991 and 1996 censuses. It is growing 0.3 percent faster than the national population, which grew at 1.4 percent annual average during the inter-census years. This is largely due to the high proportion of Maori in the region (32 percent), who tend to have a higher birth rate than non-Maori.

Northland is the most rural region in New Zealand, with only 52 percent of the population residing in urban areas compared to the national average of 85 percent. Its population density is also significantly lower, at 9.8 people per square kilometre

compared to 13.1 nationally. Although Northland proportionately has more people under the age of 15 (26 percent) than nationally (23 percent), it has proportionately fewer working age residents. This is due to long periods of economic stagnation and poor access to educational facilities which has encouraged people to move to other regions, particularly Auckland, in search of better opportunities.

Employment in Northland Region in 1998 was approximately 45,900 FTEs, or 3.1 percent of employment in New Zealand. The region's economy generated employment growth at annual average rate of 5.0 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 6,900 FTEs, 15 percent of the region's total employment.

Fishing and seafood processing businesses employ about 450 FTEs in the Northland Region. This is about 1.0 percent of the region's total FTEs, and represents 4.3 percent of the industry total. There is a high proportion of self-employed fishermen in the industry, so the 197 business units in the industry average just 2.3 FTEs each compared to 5.0 nationally.

### **1.3 ECONOMIC STRUCTURE**

Northland Region's economy generated approximately \$3.3 billion of value-added in 1998. This represents 3.4 percent of New Zealand total. After decades of stagnation, recent growth in the region has been strong at an annual average of 4.8 percent between 1993 and 1998, compared to 3.5 percent for New Zealand. The difference is slightly less on a per capita basis due to Northland's more rapid population growth, at 3.0 percent compared to 2.1 percent nationally.

The petroleum refining industry based at Marsden Point is the largest single industry in the Northland Region. It contributes 12.2 percent (\$423 million) of the region's GDP, despite employing just 0.8 percent (480) of FTEs. Dairy farming and forestry are major industries, although in terms of land use cattle farming predominates. The tourism industry is also important, with accommodation provision alone accounting for approximately \$57 million (1.7 percent) of the region's GDP.

**Table 1.1: Selected Northland Industries**

Source: McDermott Fairgray Group Ltd.

<b>Industry</b>	<b>FTEs</b>	<b>GDP (\$millions)</b>	<b>GDP Share of Total</b>
Petroleum, Coal and Basic Chemical Product Mfg	480	423	12.7%
Wholesale and Retail Trade	6,890	330	9.9%
Dairy	3,690	167	5.0%
Construction	3,300	116	3.5%
Forestry & Logging	620	104	3.1%
<i>Seafood Industry</i>	<i>450</i>	<i>22</i>	<i>0.7%</i>

The fishing and seafood processing industry in Northland has an annual output of about \$65 million. This adds around \$22 million of value to the regional economy. Relative to the size of the economy, the industry is more important to Northland than it is to New Zealand overall.

### **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 \$18.6 million in value added, or 85.6 percent of the total Northland seafood industry value added. Output is around \$52.3 million. The sector employs 290 FTEs, 64.4 percent of total employment in the Northland seafood industry (Table 1.2).

#### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of \$590,000 in value added, or 2.7 percent of total seafood industry value added in Northland. Total output is \$3.2 million. The employment generated by this level of activity is about 110 FTEs (Table 1.2).

## **Fish and Shellfish Processing**

Fish and shellfish processing directly contributes \$2.5 million of value added to the Northland seafood industry, 11.7 percent of the seafood industry's GDP. Annual processing output is \$9.4 million. The sector employs about 50 FTEs, or 11.1 percent of the total Northland seafood industry workforce (Table 1.2).

**Table 1.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	52,330	3,190	9,380
Value Added (\$000)	18,570	590	2,540
Employment (FTEs)	290	110	50

### **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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output Impacts</i>			
Type I Multiplier	1.79	1.79	2.01
Type II Multiplier	2.04	2.07	2.26
<i>Value Added Impacts</i>			
Type I Multiplier	2.38	2.94	2.74
Type II Multiplier	2.69	3.63	3.15
<i>Employment Impacts</i>			
Type I Multiplier	1.70	1.16	2.17
Type II Multiplier	2.06	1.23	2.55

### **Ocean and Coastal Fishing and Fishing Consultants**

Some of output from ocean and coastal fishing and fishing consultants (6.9 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 directly overseas or to other regions. The accommodation industry is the next largest consumer of ocean and coastal fishing and fishing consultants' output (Table 1.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	45,340	86.6%
Fish and Shellfish Processing	3,600	6.9%
Motels, Hotels, Guest Houses, Camps and other Accommodation	510	1.0%
Other	2,880	5.5%
<b>TOTAL</b>	<b>52,330</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$31.4 million of value added from output of \$54.4 million. This level of activity generates employment equivalent to an additional 300 FTEs (Table 1.7).

### **Fishing in Inland Waters and Fish Farming**

A small part of the output of fishing in inland waters and fish farming (2.1 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 is exported either inter-regionally or internationally (Table 1.5).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	3,110	97.6%
Fish and Shellfish Processing	70	2.1%
Other	10	0.2%
<b>TOTAL</b>	<b>3,190</b>	<b>100.0%</b>

The indirect impact is an estimated \$1.2 million contribution to the region's GDP. An additional \$410,000 is generated by the induced impact, for a total of \$1.6 million value added. The employment impact is an additional 30 FTEs (Table 1.7).

### **Fish and Shellfish Processing**

About 58.5 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 (1.1 percent). All other industries combined consume less than 1 percent of fish and shellfish processing output (Table 1.6).

**Table 1.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	5,480	58.5%
Restaurants, Cafes and other Eating and Drinking Places	690	7.4%
Motels, Hotels, Guest Houses, Camps and other Accommodation	520	5.6%
Fish and Shellfish Processing	100	1.1%
Other	2,590	27.6%
<b>TOTAL</b>	<b>9,380</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing are \$5.5 million value added from output of \$11.8 million. The employment impact is 80 FTEs, 20 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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	52,330	3,190	9,380
Indirect	41,350	2,510	9,490
Induced	13,010	920	2,350
<b>Total</b>	<b>106,700</b>	<b>6,610</b>	<b>21,220</b>
<b>% of Total Output</b>	<b>0.80%</b>	<b>0.05%</b>	<b>0.16%</b>
<i>Value Added (\$000)</i>			
Direct	18,570	590	2,540
Indirect	25,620	1,150	4,420
Induced	5,760	410	1,040
<b>Total</b>	<b>49,950</b>	<b>2,150</b>	<b>8,000</b>
<b>% of Total GDP</b>	<b>1.50%</b>	<b>0.06%</b>	<b>0.24%</b>
<i>Employment (FTEs)</i>			
Direct	290	110	50
Indirect	200	20	60
Induced	100	10	20
<b>Total</b>	<b>590</b>	<b>140</b>	<b>120</b>
<b>% of Total Employment</b>	<b>1.29%</b>	<b>0.31%</b>	<b>0.27%</b>

### **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. In Northland however these impacts are not large enough to be significant.

### **1.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS**

Total direct, indirect and induced impacts of the Northland seafood industry amount to \$60.1 million of value added and 860 FTEs (Table 1.8). The majority (86.7 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 this 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 \$38.4 million compared to direct impacts of \$21.7 million. The implied value added multiplier is 2.77. The corresponding employment multiplier is 1.91. These are substantially lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 1.8: Seafood Industry Impact Summary**

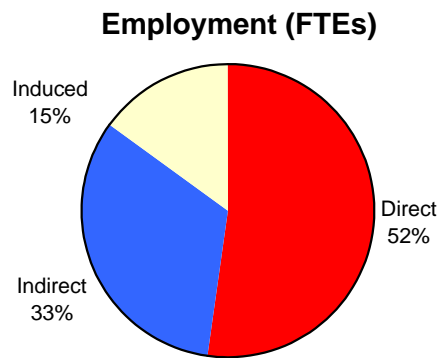
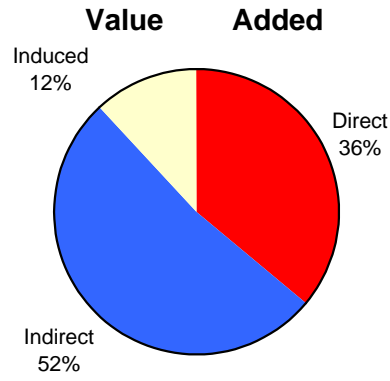
Source: McDermott Fairgray Group Ltd.

	<b>Fishing Impacts</b>	<b>Fish &amp; Shellfish Processing Impacts</b>	<b>TOTAL</b>
<i>Output (\$m)</i>			
Direct	55.5	9.4	64.9
Indirect	43.9	9.5	53.4
Induced	13.9	2.4	16.3
<b>Total</b>	<b>113.3</b>	<b>21.2</b>	<b>134.5</b>
<i>Value Added (\$m)</i>			
Direct	19.2	2.5	21.7
Indirect	26.8	4.4	31.2
Induced	6.2	1.0	7.2
<b>Total</b>	<b>52.1</b>	<b>8.0</b>	<b>60.1</b>
<i>Employment (FTEs)</i>			
Direct	400	50	450
Indirect	220	60	280
Induced	110	20	130
<b>Total</b>	<b>730</b>	<b>130</b>	<b>860</b>

Direct impacts account for 36 percent of total value added impacts and 42 percent of employment impacts (Figure 1.1 overleaf).

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

Source: McDermott Fairgray Group



### **1.3.5      *ECONOMIC OUTLOOK***

The economic outlook for Northland Region to a large extent depends on external factors such as commodity prices, tourism demand and the future of the Marsden Point oil refinery, where operations have been scaled back in recent years. Although commodity prices have been poor of late, the low value of the \$NZ is assisting commodity exports and making New Zealand a cheaper tourist destination. Recent oil finds in the Taranaki Region may assist the Marsden Point operation in the longer term, as crude oil is shipped there for refining.

The construction sector in Northland has been growing strongly, with building consents running at approximately 750 per quarter. With population growth forecast to continue at above average rates, this industry could also be an important driver of economic growth in the region.

## **2 AUCKLAND**

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### **2.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Auckland Region's economy was about \$31.7 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 5.6 percent, considerably faster than the national average of 3.5 percent.

Auckland's population is currently around 1.1 million and growing rapidly. It is the predominant centre of economic activity in New Zealand. Service industries such as communications and business services have taken over from manufacturing industries in recent years as the major drivers of economic growth in the region. The seafood industry is not large in comparison with other industries in the region, although it comprises over 10 percent of New Zealand seafood industry overall.

The outlook for the Auckland economy is for robust growth. Growth is likely to be driven by rapid population growth, dynamic service industries and favourable conditions for manufactured exports.

### **2.2 POPULATION AND EMPLOYMENT**

Auckland Region was home to 1,068,645 people at the time of the 1996 census. Its population grew at an annual average rate of approximately 2.5 percent between the 1991 and 1996 censuses. It is growing substantially faster than the national population, which grew at 1.4 percent annual average during the inter-census years. Auckland's population is forecast to reach 1,551,000 by 2021.

Auckland is the most densely populated region in New Zealand with 191 people per square kilometre in 1996. Rodney and Franklin are the fastest growing TLAs in the region. The region has a higher proportion of working age people than is the norm nationally due to its central role in the national economy.

Employment in the Auckland Region in 1998 was approximately 481,300 FTEs, or 32.1 percent of employment in New Zealand. The region's economy generated employment growth at annual average rate of 5.4 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 99,000 FTEs, 20.6 percent of the region's total employment.

Fishing and seafood processing businesses employ about 1,090 FTEs in the Auckland Region. Although this is only 0.2 percent of the region's total FTEs, it represents 10.5 percent of the seafood industry total.

## **2.3 ECONOMIC STRUCTURE**

Auckland Region's economy generated approximately \$31.7 billion of value-added in 1998. This represents 32.3 percent of New Zealand total. Growth in the region has been strong with an annual average of 5.6 percent between 1993 and 1998, compared to 3.5 percent for New Zealand. The difference is somewhat less on a per capita basis due to Auckland's more rapid population growth, at 3.0 percent compared to 2.1 percent nationally.

The wholesale and retail industry is the largest single industry in the Auckland Region, contributing 15.0 percent of the region's GDP. Although manufacturing industries have historically been the most important drivers of Auckland's growth, service industries such as communications and services to business now form the most dynamic sector of the regional economy. Major manufacturing industries in Auckland include food processing, printing and publishing, and industrial machinery and equipment, while the Glenbrook Steel Mill produces up to 700,000 tonnes of steel annually of which around half is exported.

**Table 2.1: Selected Auckland Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	99,080	4,754	15.0%
Business Services	51,380	2,061	6.5%
Finance	9,680	1,982	6.2%
Real Estate	7,820	1,789	5.6%
Communications Services	10,520	1,640	5.2%
<i>Seafood Industry</i>	<i>1,090</i>	<i>56</i>	<i>0.2%</i>

### **2.3.1 SEAFOOD INDUSTRY DIRECT IMPACTS**

The direct impact of the seafood industry is a measure of 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 \$25.3 million in value added, generated from output of \$71.4 million. The industry employs about 390 FTEs in Auckland, 36.0 percent of total employment in the Auckland seafood industry. Value added per FTE is almost \$65,000.

#### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of \$580,000 in value added, or 1.7 percent of total Auckland seafood industry value added. Total output is \$3.1 million. Employment is about 110 FTEs, a disproportionately large 10.1 percent of total Auckland seafood industry employment.

#### **Fish and Shellfish Processing**

Fish and shellfish processing is the largest part of the Auckland seafood industry, adding 53.9 percent (\$30.3 million) of total industry GDP. Processing employment is about 580 FTEs. Value added per FTE is \$52,200.

**Table 2.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	71,410	3,100	111,820
Value Added (\$000)	25,340	580	30,280
Employment (FTEs)	390	110	580

### **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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output Impacts</i>			
Type I Multiplier	2.07	2.44	1.80
Type II Multiplier	2.40	2.93	2.09
<i>Value Added Impacts</i>			
Type I Multiplier	2.44	4.37	2.32
Type II Multiplier	2.85	5.54	2.78
<i>Employment Impacts</i>			
Type I Multiplier	1.99	1.28	1.97
Type II Multiplier	2.46	1.38	2.39

## Ocean and Coastal Fishing and Fishing Consultants

The majority of output from ocean and coastal fishing and fishing consultants (69.5 percent) is exported either directly overseas or to other regions. About \$14.2 million is consumed by the local processing industry. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Small amounts also go to the fruit and vegetable processing and accommodation industries (Table 2.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	49,600	69.5%
Fish and Shellfish Processing	14,150	19.8%
Fruit and Vegetable Processing	1,130	1.6%
Motels, Hotels, Guest Houses, Camps and other Accommodation	720	1.0%
Other	5,820	8.1%
<b>TOTAL</b>	<b>71,410</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$46.9 million of value added. This level of activity generates employment equivalent to an additional 570 FTEs (Table 2.7).

## Fishing in Inland Waters and Fish Farming

About 9.6 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. However it can legitimately be applied to the remaining 90.4 percent of the industry, which mostly comprises exports (Table 2.5).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	2,760	89.0%
Fish and Shellfish Processing	300	9.6%
Other	40	1.3%
<b>TOTAL</b>	<b>3,100</b>	<b>100.0%</b>

The indirect impact is estimated at some \$1.9 million. An additional \$670,000 is generated by the induced impact, for a total of \$2.6 million value added. The employment impact is an additional 40 FTEs (Table 2.7).

### **Fish and Shellfish Processing**

About 69.4 percent of fish and shellfish processing output is exported. Restaurants, cafes and eateries consume 8.3 percent, and the accommodation industry 2.3 percent. Almost \$1.4 million of output (1.2 percent) flows back into the fish and shellfish processing industry itself (Table 2.6).

**Table 2.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	77,610	69.4%
Restaurants, Cafes and other Eating and Drinking Places	9,250	8.3%
Motels, Hotels, Guest Houses, Camps and other Accommodation	2,540	2.3%
Fish and Shellfish Processing	1,350	1.2%
Other	21,070	18.8%
<b>TOTAL</b>	<b>111,820</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing total \$53.8 million of value added, compared to the direct impact of \$30.3 million. The employment impact is 800 FTEs, 240 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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	71,410	3,100	111,820
Indirect	76,080	4,460	89,590
Induced	23,980	1,540	32,110
<b>Total</b>	<b>171,470</b>	<b>9,100</b>	<b>233,510</b>
<b>% of Total Output</b>	<b>0.16%</b>	<b>0.01%</b>	<b>0.22%</b>
<i>Value Added (\$000)</i>			
Direct	25,340	580	30,280
Indirect	36,430	1,940	39,840
Induced	10,480	670	14,040
<b>Total</b>	<b>72,250</b>	<b>3,190</b>	<b>84,150</b>
<b>% of Total GDP</b>	<b>0.23%</b>	<b>0.01%</b>	<b>0.27%</b>
<i>Employment (FTEs)</i>			
Direct	390	110	580
Indirect	390	30	560
Induced	180	10	240
<b>Total</b>	<b>960</b>	<b>150</b>	<b>1,390</b>
<b>% of Total Employment</b>	<b>0.20%</b>	<b>0.03%</b>	<b>0.29%</b>

### **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 Auckland however these impacts are insignificant.

### **2.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS**

Total direct, indirect and induced impacts of the seafood industry amount to \$159.6 million of value added and 2,490 FTEs (Table 2.8). About 52.7 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 \$103.4 million compared to direct impacts of \$56.2 million. The implied value added multiplier is 2.84. The corresponding employment multiplier is 2.53. These are somewhat lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 2.8: Seafood Industry Impact Summary**

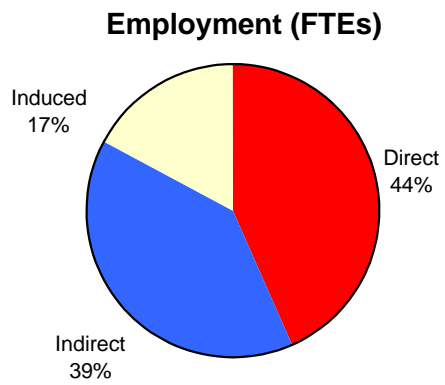
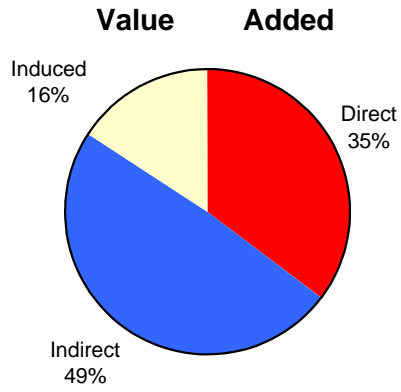
Source: McDermott Fairgray Group Ltd.

	<b>Fishing Impacts</b>	<b>Fish &amp; Shellfish Processing Impacts</b>	<b>TOTAL</b>
<i>Output (\$m)</i>			
Direct	74.5	111.8	186.3
Indirect	80.5	89.6	170.1
Induced	25.5	32.1	57.6
<b>Total</b>	<b>180.6</b>	<b>233.5</b>	<b>414.1</b>
<i>Value Added (\$m)</i>			
Direct	25.9	30.3	56.2
Indirect	38.4	39.8	78.2
Induced	11.2	14.0	25.2
<b>Total</b>	<b>75.4</b>	<b>84.2</b>	<b>159.6</b>
<i>Employment (FTEs)</i>			
Direct	500	580	1,080
Indirect	420	560	980
Induced	190	240	430
<b>Total</b>	<b>1,110</b>	<b>1,380</b>	<b>2,490</b>

Direct impacts account for 35 percent of total value added impacts and 44 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**

The economic outlook for the Auckland Region is strong. With service industries being the major driver of economic growth and a large internal market, the region is less influenced by the vicissitudes of international commodity prices than most other regions in New Zealand. In addition the region's economy is bolstered by rapid population growth.

Exports of manufactured products are also likely to perform strongly due to favourable international conditions. The weak value of the \$NZ relative to our major trading partners makes exports cheaper in these markets, which is stimulating demand. In addition, the Asian economies, which suffered from the financial crisis of 1997-98 have rebounded with stronger than expected growth.

## **3 WAIKATO**

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### **3.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Waikato Region's economy was \$8.8 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 3.2 percent, slightly slower than the national average of 3.5 percent.

Waikato's population is currently around 350 000, but the region is growing somewhat slower than the national inter-census average of 1.4 percent. Migration to the Bay of Plenty and the South Island are partly responsible. Major industries in the region include dairy farming, education, forestry, tourism and energy production.

The economic outlook for Waikato is reasonably strong. The fairly diverse range of major industries reduces the risk of economic shocks to particular sectors causing the entire regional economy to falter. However, in common with most other rural New Zealand provinces, international commodity prices will still have a large influence on the Waikato Region's future prosperity.

### **3.2 POPULATION AND EMPLOYMENT**

Waikato Region was home to 350,124 people at the time of the 1996 census, the fourth largest regional population in the country. Its population grew at an annual average rate of approximately 1.1 percent between the 1991 and 1996 censuses. It is growing slower than the national population, which grew at 1.4 percent annual average during the inter-census years. This is despite the high proportion of Maori in the region (21.3 percent), who tend to have a higher birth rate than non-Maori. Although the region has attracted migration from most other North Island Regions, there have been large migration losses to the fast growing Bay of Plenty Region for lifestyle and employment reasons, and to the South Island regions Canterbury and Southland where high quality land is significantly cheaper.

The fastest growing districts in the region are those with close proximity to the rapidly expanding Auckland Region, particularly Franklin and Thames-Coromandel. In contrast, the southern districts of Waitomo and South Waikato are forecast to lose around 18 and 21 percent of their respective populations by 2021. The Waikato Region's population density is close to the national average at 13.7 people per square kilometre compared to 13.1 nationally. The region has the second lowest median age of 31.9 years. This is partly due to the large Maori population. Unlike most other regions, males outnumber females, a result of the agricultural industry's dominance.

Employment in Waikato Region in 1998 was approximately 139,000 FTEs, or 9.3 percent of employment in New Zealand. The region's economy generated employment growth at an 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 19,240 FTEs, 14 percent of the region's total employment.

Fishing and seafood processing businesses employ about 440 FTEs in the Waikato Region. This is about 0.3 percent of the region's total FTEs, and represents 4.3 percent of the industry total. The 147 business units in the industry average just 3.0 FTEs each compared to 5.0 nationally.

### **3.3 ECONOMIC STRUCTURE**

Waikato Region's economy generated approximately \$8.8 billion of value-added in 1998. This represents 8.9 percent of New Zealand total. GDP growth has been slower than in the national economy overall, averaging 3.3 percent compared to 3.5 percent for New Zealand. However on a per capita basis there is no difference due to Waikato's slower population growth, the Waikato Region and New Zealand both grow at 2.1 percent.

Wholesale and retail is the largest single industry in the Waikato Region, with GDP of \$923 million and employing 19,240 FTEs. Dairy farming is the industry the region is best known for. It contributes 7.4 percent (\$648 million) of the region's GDP and employs about 14,290 FTEs. Forestry is important in the south of the region, where the Kinleith Pulp and Paper Mill in Tokoroa is a major employer. The tourism industry is also important, with the Waikato Region including some of New Zealand's pre-eminent

tourist destinations such as Waitomo and Taupo. The region produces almost 75 percent of the North Island's energy with hydro-electric, coal and geothermal generation facilities. Education is a particularly important industry to the region's major city Hamilton due to the presence of the University of Waikato and Waikato Polytechnic.

**Table 3.1: Selected Waikato Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	19,240	923	10.5%
Dairy	14,290	648	7.4%
Education	12,030	362	4.1%
Communications Services	1,950	304	3.5%
Business Services	7,270	295	3.4%
Electricity Generation & Distribution	950	278	3.2%
<i>Seafood Industry</i>	<i>440</i>	<i>19</i>	<i>0.2%</i>

The fishing and seafood processing industry in Waikato has an annual output of about \$60 million. Relative to the size of the economy, the industry is less important to Waikato than it is to New Zealand overall.

### **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 \$11.4 million in value added, or 60.6 percent of the total Waikato seafood industry value added. Output is around \$32.0 million. The sector employs 180 FTEs, 40.0 percent of total employment in the Waikato seafood industry (Table 3.2).

### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of \$730,000 in value added, or 3.9 percent of total seafood industry value added in Waikato. Total output is \$3.9 million. The employment generated by this level of activity is about 140 FTEs (Table 3.2).

### **Fish and Shellfish Processing**

Fish and shellfish processing directly contributes \$6.6 million of value added to the Waikato seafood industry, 35.5 percent of the seafood industry's GDP. Annual processing output is \$24.5 million. The sector employs about 130 FTEs, or 28.9 percent of the total Waikato seafood industry workforce (Table 3.2).

**Table 3.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	31,980	3,910	24,510
Value Added (\$000)	11,350	730	6,640
Employment (FTEs)	180	140	130

### **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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output Impacts</i>			
Type I Multiplier	1.22	1.81	1.59
Type II Multiplier	1.32	2.12	1.78
<i>Value Added Impacts</i>			
Type I Multiplier	1.26	2.84	1.88
Type II Multiplier	1.37	3.56	2.18
<i>Employment Impacts</i>			
Type I Multiplier	1.24	1.17	1.78
Type II Multiplier	1.37	1.24	2.06

### **Ocean and Coastal Fishing and Fishing Consultants**

Some of output from ocean and coastal fishing and fishing consultants (15.0 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 (75.7 percent) is exported either directly overseas or to other regions. A further 1.6 percent is consumed by the accommodation industry (Table 3.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	24,210	75.7%
Fish and Shellfish Processing	4,800	15.0%
Motels, Hotels, Guest Houses, Camps and other Accommodation	500	1.6%
Other	2,460	7.7%
<b>TOTAL</b>	<b>31,980</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$4.3 million of value added from output of \$10.1 million. This level of activity generates employment equivalent to an additional 60 FTEs (Table 3.7).

### **Fishing in Inland Waters and Fish Farming**

A small portion of the output of fishing in inland waters and fish farming (4.6 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 is consumed by inter-regional and international exports, while all other industries consume a total of 4.9 percent (Table 3.5)

**Table 3.5: Consumption of Fishing in Inland Waters and Fish Farming Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	3,720	95.1%
Fish and Shellfish Processing	180	4.6%
Other	10	4.9%
<b>TOTAL</b>	<b>3,910</b>	<b>100.0%</b>

The indirect impact is estimated at some \$1.3 million value added. An additional \$530,000 is generated by the induced impact, for a total of \$1.9 million value added. The employment impact is an additional 30 FTEs (Table 3.7).

### **Fish and Shellfish Processing**

About 59.6 percent of fish and shellfish processing output is exported to other regions and overseas. Restaurants, cafes and eateries consume 7.5 percent. Smaller amounts are utilised by the accommodation and cropping industries (3.5 percent and 1.7 percent of processing output respectively) (Table 3.6).

**Table 3.7: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	14,620	59.6%
Restaurants, Cafes and other Eating and Drinking Places	1,840	7.5%
Motels, Hotels, Guest Houses, Camps and other Accommodation	870	3.5%
Cropping	420	1.7%
Other	6,760	27.6%
<b>TOTAL</b>	<b>24,510</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing total \$7.8 million. The employment impact is 140 FTEs, 40 of which result from induced impacts. Value added per FTE averages \$51,100 (Table 3.7).

**Table 3.7: Seafood Industry Output, Value Added and Employment Impacts**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	31,980	3,910	24,510
Indirect	7,110	3,160	14,420
Induced	2,990	1,230	4,730
<b>Total</b>	<b>42,080</b>	<b>8,300</b>	<b>43,650</b>
<b>% of Total Output</b>	<b>0.13%</b>	<b>0.03%</b>	<b>0.14%</b>
<i>Value Added (\$000)</i>			
Direct	11,350	730	6,640
Indirect	2,980	1,340	5,820
Induced	1,280	530	2,020
<b>Total</b>	<b>15,600</b>	<b>2,590</b>	<b>14,470</b>
<b>% of Total GDP</b>	<b>0.18%</b>	<b>0.03%</b>	<b>0.17%</b>
<i>Employment (FTEs)</i>			
Direct	180	140	130
Indirect	40	20	100
Induced	20	10	40
<b>Total</b>	<b>240</b>	<b>170</b>	<b>260</b>
<b>% of Total Employment</b>	<b>0.17%</b>	<b>0.12%</b>	<b>0.19%</b>

### **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 the Waikato region however, these impacts are not significant.

### **3.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS**

Total direct, indirect and induced impacts of the Waikato seafood industry amount to \$32.7 million of value added and 680 FTEs (Table 3.8). The majority (55.7 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 this 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 \$14.0 million compared to direct impacts of \$18.7 million. The implied value added multiplier is 1.75. The corresponding employment multiplier is 1.51. These are much lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 3.8: Seafood Industry Impact Summary**

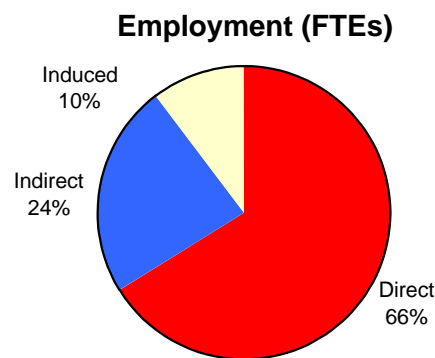
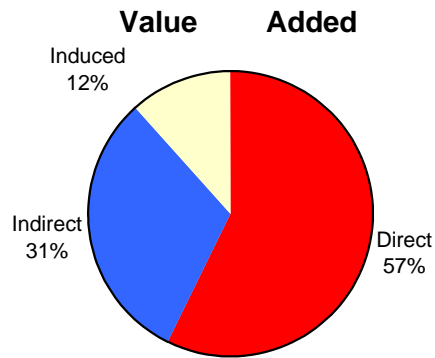
Source: McDermott Fairgray Group Ltd.

	<b>Fishing Impacts</b>	<b>Fish &amp; Shellfish Processing Impacts</b>	<b>TOTAL</b>
<i>Output (\$m)</i>			
Direct	35.9	24.5	60.4
Indirect	10.3	14.4	24.7
Induced	4.2	4.7	9.0
<b>Total</b>	<b>50.4</b>	<b>43.7</b>	<b>94.0</b>
<i>Value Added (\$m)</i>			
Direct	12.1	6.6	18.7
Indirect	4.3	5.8	10.1
Induced	1.8	2.0	3.8
<b>Total</b>	<b>18.2</b>	<b>14.5</b>	<b>32.7</b>
<i>Employment (FTEs)</i>			
Direct	320	130	450
Indirect	60	100	160
Induced	30	40	70
<b>Total</b>	<b>410</b>	<b>270</b>	<b>680</b>

Direct impacts account for 57 percent of total value added impacts and 66 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**

The economic outlook for Waikato Region appears healthy. The region has a reasonably diversified economic base, although prosperity will to some extent depend on commodity prices holding up, particularly in the important dairy and forestry industries. Although commodity prices have been poor of late, the low value of the \$NZ is assisting commodity exports. In addition, the Asian economies which suffered from the financial crisis of 1997-98 have rebounded with stronger than expected growth. This is particularly so in South Korea, New Zealand's largest Asian market for forestry products.

The favourable international economic environment is also an encouraging sign for the region's tourism industry. Domestic tourism should also benefit from proximity to the burgeoning Auckland metropolis, with destinations such as Taupo and the Thames-Coromandel district popular holiday spots.

## **4 BAY OF PLENTY**

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### **4.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Bay of Plenty Region's economy was \$5.6 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 4.6 percent, faster than the national average of 3.5 percent.

Bay of Plenty's population is currently around 230 000, and the region is the second fastest growing behind Auckland. Between 1991 and 1996 it grew at an annual average rate of 1.9 percent compared to the national inter-census average of 1.4 percent. Internal migration from other North Island regions is the main contributor to this growth, particularly from Waikato, Manawatu-Wanganui and Wellington. Major industries in the region include the Kawerau Pulp and Paper Mill, forestry, horticulture and tourism.

The rapid population growth of the Bay of Plenty Region should ensure continuing robust economic growth for the region, for the construction and wholesale and retail industries in particular. The outlook for forestry and tourism is also strong, given the favourable international environment. The major threat to the Bay of Plenty's economy is the potential closure of the Kawerau Pulp and Paper Mill, which accounts for 5.5 percent of the region's GDP.

### **4.2 POPULATION AND EMPLOYMENT**

Bay of Plenty Region was home to 224,364 people at the time of the 1996 census, the fourth largest regional population in the country. Its population grew at an annual average rate of approximately 1.9 percent between the 1991 and 1996 censuses. This is substantially faster than the national population, and the population is forecast to reach 288,700 by 2021. Population growth is being primarily driven by internal migration from other North Island regions, especially from Waikato, Manawatu-Wanganui and Wellington. The region is a popular retirement destination due to its mild climate and beaches.

The rapid population growth the Bay of Plenty is experiencing is following a dichotomous pattern, with Tauranga and the Western districts absorbing the growth while more remote eastern districts such as Whakatane and Opotiki are actually expected to experience net population loss. Tauranga and the western districts have the advantage of closer proximity to major population centres such as Auckland and Hamilton, while retirees find that Tauranga district provides the best access to health care and other services.

The Bay of Plenty Region's population density is higher than the national average at 18 people per square kilometre compared to 13.1 nationally. The region has a higher than average median age of 33.7 years, reflecting the large number of retirees. However there is also a large number of children, partially due to the large and rapidly expanding Maori population in the region. Consequently, the region has a below average proportion of working age people.

Employment in Bay of Plenty Region in 1998 was about 84,000 FTEs, or 5.6 percent of employment in New Zealand. The region's economy generated rapid employment growth at an annual average rate of 6.0 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 13,870 FTEs, 16.6 percent of the region's total employment. Other large employers include construction (7,230 FTEs) and horticulture (4,686 FTEs).

Fishing and seafood processing businesses employ about 450 FTEs in the Bay of Plenty Region. This is about 0.5 percent of the region's total FTEs, and represents 4.3 percent of the seafood industry total. The 135 business units in the industry average 3.3 FTEs each, compared to 5.0 nationally.

### **4.3 ECONOMIC STRUCTURE**

Bay of Plenty Region's economy generated approximately \$5.6 billion of value-added in 1998. This represents 5.7 percent of New Zealand total. GDP growth has been more rapid than in the national economy overall, averaging 4.6 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis the difference

is less due to Bay of Plenty's faster population growth, the Bay of Plenty Region averaging 2.6 percent compared to 2.1 percent nationally.

Wholesale and retail is the largest single industry in the Bay of Plenty Region, with GDP of \$665 million. Forestry and logging generates GDP of approximately \$233 million. Related to this is the Kawerau Pulp and Paper Mill, which contributes 5.5 percent (\$304 million) of the region's GDP and employs about 1,930 FTEs. The tourism industry is also important, with the Bay of Plenty Region containing one of New Zealand's most important international tourist destinations, Rotorua. Horticulture flourishes in the region's warm and fertile conditions. The major crops are kiwifruit, tangelos, nashi, avocado, feijoas and passionfruit. The transport industry also plays a major role in the regional economy, due to the high volumes of forestry and primary exports from the Port of Tauranga, sourced from both within and outside the region.

**Table 4.1: Selected Bay of Plenty Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	13,870	665	11.9%
Health and Community Services	7,300	336	6.0%
Paper and Paper Product Manufacturing	1,930	304	5.5%
Construction	7,230	236	4.2%
Forestry & Logging	1,880	233	4.2%
Horticulture	4,690	173	3.1%
<i>Seafood Industry</i>	450	25	0.4%

#### **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 \$15.4 million in value added, generated from output of \$43.3 million. The industry employs about 240 FTEs in the Bay of Plenty, 53.3 percent of total employment in the Bay of Plenty seafood industry. Value added per FTE is approximately \$64,000 (Table 4.2).

### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of \$170,000 in value added, just 0.7 percent of total seafood industry value added in the Bay of Plenty. Total output is \$920,000. Employment is about 30 FTEs, or 6.7 percent of total Bay of Plenty seafood industry employment (Table 4.2).

### **Fish and Shellfish Processing**

Fish and shellfish processing contributes \$9.3 million of value added to the Bay of Plenty seafood industry, about 43.8 percent of total industry GDP. Processing employment is 180 FTEs. Value added per FTE is \$51,800 (Table 4.2).

**Table 4.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	43,250	920	34,460
Value Added (\$000)	15,350	170	9,330
Employment (FTEs)	240	30	180

### **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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output Impacts</i>			
Type I Multiplier	1.68	2.02	2.06
Type II Multiplier	1.97	2.38	2.35
<i>Value Added Impacts</i>			
Type I Multiplier	2.43	3.45	2.90
Type II Multiplier	2.79	4.29	3.37
<i>Employment Impacts</i>			
Type I Multiplier	1.61	1.21	2.22
Type II Multiplier	2.02	1.29	2.67

### **Ocean and Coastal Fishing and Fishing Consultants**

The majority of output from ocean and coastal fishing and fishing consultants (60.2 percent) is exported either directly overseas or to other regions. About \$13.2 million (30.6 percent) is consumed by the local processing industry. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Small amounts also go to the accommodation and fruit and vegetable processing industries (Table 4.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	26,030	60.2%
Fish and Shellfish Processing	13,230	30.6%
Motels, Hotels, Guest Houses, Camps and other Accommodation	810	1.9%
Fruit and Vegetable Processing	660	1.5%
Other	2,520	5.8%
<b>TOTAL</b>	<b>43,250</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$27.4 million of value added, from output of \$42.0 million. This level of activity generates employment equivalent to an additional 250 FTEs (Table 4.7).

### **Fishing in Inland Waters and Fish Farming**

About 17.1 percent (\$160,000) 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 0.8 percent consumed by other industries (Table 4.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	760	82.1%
Fish and Shellfish Processing	160	17.1%
Other	0	0.8%
<b>TOTAL</b>	<b>920</b>	<b>100.0%</b>

The indirect impact is estimated at some \$420,000 of value added. An additional \$140,000 is generated by the induced impact, for a total of \$560,000 value added. Total indirect and induced output is almost \$1.3 million. The employment impact is an additional 10 FTEs (Table 4.7).

### **Fish and Shellfish Processing**

About 70.1 percent of fish and shellfish processing output is exported immediately, either internationally or to other regions. Restaurants, cafes and eateries consume 8.0 percent, the accommodation industry 4.9 percent and about \$740,000 of output (2.1 percent) flows back into the fish and shellfish processing industry itself. Around 1.4 percent is consumed by the cropping industry (Table 4.6).

**Table 4.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	24,150	70.1%
Restaurants, Cafes and other Eating and Drinking Places	2,750	8.0%
Motels, Hotels, Guest Houses, Camps and other Accommodation	1,680	4.9%
Fish and Shellfish Processing	740	2.1%
Cropping	480	1.4%
Other	5,140	14.9%
<b>TOTAL</b>	<b>34,460</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing total \$22.1 million of value added, from output of \$46.6 million. The employment impact is 300 FTEs, 80 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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	43,250	920	34,460
Indirect	29,470	940	36,380
Induced	12,560	330	10,220
<b>Total</b>	<b>85,280</b>	<b>2,190</b>	<b>81,060</b>
<b>% of Total Output</b>	<b>0.43%</b>	<b>0.01%</b>	<b>0.41%</b>
<i>Value Added (\$000)</i>			
Direct	15,350	170	9,330
Indirect	21,930	420	17,680
Induced	5,480	140	4,460
<b>Total</b>	<b>42,770</b>	<b>740</b>	<b>31,480</b>
<b>% of Total GDP</b>	<b>0.77%</b>	<b>0.01%</b>	<b>0.56%</b>
<i>Employment (FTEs)</i>			
Direct	240	30	180
Indirect	150	10	220
Induced	100	0	80
<b>Total</b>	<b>480</b>	<b>40</b>	<b>480</b>
<b>% of Total Employment</b>	<b>0.58%</b>	<b>0.05%</b>	<b>0.57%</b>

### 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. In the Bay of Plenty however these impacts are insignificant.

#### **4.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS**

Total direct, indirect and induced impacts of the Bay of Plenty seafood industry amount to \$75.0 million of value added and 1,010 FTEs (Table 4.8). About 58.0 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 this 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 \$50.1 million compared to direct impacts of \$24.9 million. The implied value added multiplier is 3.02. The corresponding employment multiplier is 2.24. These are slightly lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 4.8: Seafood Industry Impact Summary**

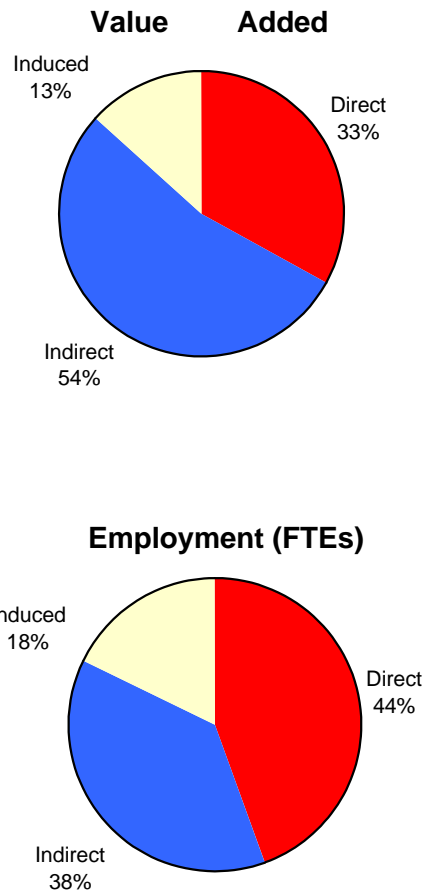
Source: McDermott Fairgray Group Ltd.

	<b>Fishing Impacts</b>	<b>Fish &amp; Shellfish Processing Impacts</b>	<b>TOTAL</b>
<i>Output (\$m)</i>			
Direct	44.2	34.5	78.6
Indirect	30.4	36.4	66.8
Induced	12.9	10.2	23.1
<b>Total</b>	<b>87.5</b>	<b>81.1</b>	<b>168.5</b>
<i>Value Added (\$m)</i>			
Direct	15.5	9.3	24.9
Indirect	22.4	17.7	40.0
Induced	5.6	4.5	10.1
<b>Total</b>	<b>43.5</b>	<b>31.5</b>	<b>75.0</b>
<i>Employment (FTEs)</i>			
Direct	270	180	450
Indirect	160	220	380
Induced	100	80	180
<b>Total</b>	<b>530</b>	<b>480</b>	<b>1,010</b>

Direct impacts account for 33 percent of total value added impacts and 44 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**

Economic growth in the Bay of Plenty Region is being driven by rapid population growth. This is reflected in the rapidly increasing number of building permits issued, the fastest growth in the country. The outlook for the construction, wholesale and retail sectors looks bright given the continued population growth that is forecast.

However on the downside, there has recently been speculation that the Kawerau Pulp and Paper Mill operation will be scaled down or even closed entirely, which would have major repercussions for the regional economy. The recovery of south-east Asian forestry markets following the financial crisis of 1997-98 bids well for the forestry sector overall, as does the weak \$NZ. The benefits of increased forestry exports will also flow-on to the transport sector. The favourable international economic environment is also an encouraging sign for the region's tourism industry.

## **5 GISBORNE**

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### **5.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Gisborne Region's economy was \$991.6 million. Between 1993 and 1998, the region's GDP grew at an annual average rate of 2.7 percent, slower than the national average of 3.5 percent.

Gisborne's population is currently around 46,600, but the region is growing slower than the national inter-census average of 1.4 percent. Migration to other regions is largely responsible. Major industries in the region include horticulture, sheep, beef and mixed livestock farming, and forestry.

The current international environment should encourage growth in Gisborne's commodity exports. However dependence on primary commodity prices and static population growth make the region's economy somewhat vulnerable.

### **5.2 POPULATION AND EMPLOYMENT**

Gisborne Region was home to 45,787 people at the time of the 1996 census, by far the smallest of the North Island regions. Its population grew at an annual average rate of approximately 0.7 percent between the 1991 and 1996 censuses, and is currently estimated at 46,600. It is growing slower than the national population, which grew at 1.4 percent annual average during the inter-census years. This is despite the very high proportion of Maori in the region (44.9 percent), who tend to have a higher birth rate than non-Maori.

Migration to other regions is the major factor in the low growth rate. Most migrants have headed for larger centres with more education and employment opportunities, particularly Auckland, Waikato, the Bay of Plenty, and to a lesser extent, Canterbury and Manawatu-Wanganui. By 2021, the region's population is forecast to be slightly less than it is currently.

Despite the high level of migration, the population has the lowest median age of any region, 31.6 years. The population density of the region is very low at 5.5 people per square kilometre, compared to 13.1 nationally. Gisborne is one New Zealand's most rural regions, with just 71.2 percent of people living in urban areas compared to 85.4 percent nationally.

Employment in the Gisborne Region in 1998 was 15,590 FTEs, or 1.0 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 3.1 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 2,220 FTEs, 14.3 percent of the region's total employment.

Fishing and seafood businesses employ about 114 FTEs in the Gisborne Region. This is about 0.7 percent of the region's total FTEs, and represents 1.1 percent of the industry total. The 41 business units in the industry average 2.8 FTEs each compared to 5.0 nationally.

### **5.3 ECONOMIC STRUCTURE**

Gisborne Region's economy generated approximately \$991.6 million of value-added in 1998. This represents 1.0 percent of New Zealand total. GDP growth has been slower than in the national economy overall, averaging 2.7 percent compared to 3.5 percent for New Zealand. On a per capita basis however, the difference is slight.

The forestry and logging industry is very important to the region, generating GDP of approximately \$74 million in 1998. The industry's output is expanding rapidly, as much land has been converted to forestry after proving too erosion prone for pastoral farming. Sheep, beef and mixed livestock farming contributes 5.6 percent (\$55 million) of the region's GDP. Horticulture is the other main industry in the region. Major crops include sweetcorn, squash and tomatoes. The region is a major producer of organic fruit and vegetables. Gisborne is the third largest grape producing region behind Marlborough and Hawke's Bay.

**Table 5.1: Selected Gisborne Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	2,220	107	10.8%
Forestry & Logging	470	74	7.5%
Sheep, Beef & Mixed Livestock	1,610	55	5.6%
Horticulture	1,530	52	5.2%
<i>Seafood Industry</i>	<i>110</i>	<i>7</i>	<i>0.7%</i>

The fishing and seafood processing industry in Gisborne has an annual output of about \$21.2 million. Relative to the size of the economy, the industry is more important to Gisborne 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 \$4.5 million in value added, or 59.3 percent of the total Gisborne seafood industry value added. Output is around \$12.5 million. The sector employs about 70 FTEs, 58.3 percent of total employment in the Gisborne seafood industry (Table 5.2).

#### **Fish and Shellfish Processing**

Fish and shellfish processing contributes \$2.3 million of value added to the Canterbury seafood industry, 40.7 percent of total industry GDP. Annual processing output is \$8.6 million. The sector employs about 50 FTEs, with value added per FTE averaging a relatively low \$46,600 (Table 5.2).

**Table 5.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	12,540	8,620
Value Added (\$000)	4,450	2,330
Employment (FTEs)	70	40

### 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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fish and Shellfish Processing</b>
<i>Output Impacts</i>		
Type I Multiplier	1.35	1.81
Type II Multiplier	1.47	1.97
<i>Value Added Impacts</i>		
Type I Multiplier	1.64	2.30
Type II Multiplier	1.80	2.59
<i>Employment Impacts</i>		
Type I Multiplier	1.32	1.93
Type II Multiplier	1.50	2.20

## Ocean and Coastal Fishing and Fishing Consultants

Almost half of output from ocean and coastal fishing and fishing consultants (49.0 percent) is exported either directly overseas or to other regions. About \$3.3 million (26.4 percent) is consumed by the local fish and shellfish processing industry. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. A large amount (worth \$2.4 million) also goes to the fruit and vegetable processing industry (Table 5.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	6,140	49.0%
Fish and Shellfish Processing	3,300	26.4%
Fruit and Vegetable Processing	2,350	18.7%
Prepared Animal Feeds	200	1.6%
Other	540	4.3%
<b>TOTAL</b>	<b>12,540</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$3.6 million of value added, from output totalling \$5.9 million. This level of activity generates employment equivalent to an additional 30 FTEs (Table 5.6).

## Fish and Shellfish Processing

About 64.5 percent of fish and shellfish processing output is exported either overseas or to other regions. The cropping industry consumes about 9.6 percent of output, restaurants, cafes and eateries 6.9 percent, prepared animal feeds 3.1 percent and the accommodation industry 3.0 percent. About \$250,000 of output (2.9 percent) flows back into the fish and shellfish processing industry itself (Table 5.5).

**Table 5.5: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	5,560	64.5%
Cropping	820	9.6%
Restaurants, Cafes and other Eating and Drinking Places	600	6.9%
Prepared Animal Feeds	260	3.1%
Motels, Hotels, Guest Houses, Camps and other Accommodation	260	3.0%
Fish and Shellfish Processing	250	2.9%
Other	870	10.1%
<b>TOTAL</b>	<b>8,620</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing in Gisborne total \$3.7 million of value added from output of \$8.4 million. The employment impact is 50 FTEs, 10 of which result from induced impacts (Table 5.6).

**Table 5.6: Seafood Industry Output, Value Added and Employment Impacts**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>		
Direct	12,540	8,620
Indirect	4,370	6,940
Induced	1,500	1,450
<b>Total</b>	<b>18,410</b>	<b>17,000</b>
<b>% of Total Output</b>	<b>0.52%</b>	<b>0.48%</b>
<i>Value Added (\$000)</i>		
Direct	4,450	2,330
Indirect	2,860	3,040
Induced	690	660
<b>Total</b>	<b>8,000</b>	<b>6,040</b>
<b>% of Total GDP</b>	<b>0.81%</b>	<b>0.61%</b>
<i>Employment (FTEs)</i>		
Direct	70	50
Indirect	20	40
Induced	10	10
<b>Total</b>	<b>100</b>	<b>100</b>
<b>% of Total Employment</b>	<b>0.66%</b>	<b>0.64%</b>

### 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 3.1 percent (\$2.4 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 \$520,000 of value added (Table 5.7).

**Table 5.7: Major Direct Impacts of Fishing on Other Industries**

Source: McDermott Fairgray Group Ltd.

	<b>Fruit and Vegetable Processing</b>
Output (\$000)	76,120
Value Added (\$000)	16,730
Employment (FTEs)	440
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	2,350
Value Added (\$000)	520
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 \$910,000. This level of activity sustains employment for some 20 FTEs. The total impact is a \$1.4 million contribution to GDP and 30 FTEs (Table 5.8).

**Table 5.8: Major Output, Value Added and Employment Impacts on Other Industries**

Source: McDermott Fairgray Group Ltd.

<b>Fruit and Vegetable Processing</b>	
<i>Output (\$000s)</i>	
Direct	2,350
Indirect	1,550
Induced	460
Total	4,360
<hr/>	
% of Total Output	0.12%
<hr/>	
<i>Value Added (\$000s)</i>	
Direct	520
Indirect	710
Induced	200
Total	1,420
<hr/>	
% of Total GDP	0.14%
<hr/>	
<i>Employment (FTEs)</i>	
Direct	10
Indirect	20
Induced	0
Total	30
<hr/>	
% of Total Employment	0.22%

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 2.0 percent (\$825,000) of cropping industry output and 2.6 percent (\$263,000) of prepared animal feed industry output is attributable to the processing sector of the seafood industry. The direct economic impact is value added of \$380,000, although the number of additional FTEs is not significant (Table 5.9).

**Table 5.9: Major Direct Impacts of Fish and Shellfish Processing Flow-on Industries**

Source: McDermott Fairgray Group Ltd.

	<b>Cropping</b>	<b>Prepared Animal Feeds</b>
Output (\$000)	42,240	10,250
Value Added (\$000)	17,490	1,540
Employment (FTEs)	90	30
<i>Estimated Seafood Industry Share</i>		
Output (\$000)	830	260
Value Added (\$000)	340	40
Employment (FTEs)	0	0

The indirect and induced economic impacts of fish and shellfish industry flow-on effects total \$370,000 of value added. More than 80 percent of this (\$300,000) is due to fish and shellfish processing inputs into the cropping industry (Table 5.10).

**Table 5.10: Fish and Shellfish Processing Flow-on Output, Value Added and Employment Impacts**

Source: McDermott Fairgray Group Ltd.

	<b>Cropping</b>	<b>Prepared Animal Feeds</b>
<i>Output (\$000s)</i>		
Direct	820	260
Indirect	560	170
Induced	100	50
Total	1,480	490
% of Total Output	0.0%	0.0%
<i>Value Added (\$000s)</i>		
Direct	340	40
Indirect	250	50
Induced	50	20
Total	640	110
% of Total GDP	0.1%	0.0%
<i>Employment</i>		
Direct	0	0
Indirect	0	0
Induced	0	0
Total	10	0
% of Total Employment	0.0%	0.0%

### 5.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Gisborne seafood industry amount to \$16.2 million of value added and 230 FTEs (Table 5.11). The largest share (49.4 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 \$8.5 million compared to direct impacts of \$7.7 million. The implied value added multiplier is 2.11. The corresponding employment multiplier is 1.77. These are significantly lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 5.11: Seafood Industry Impact Summary**

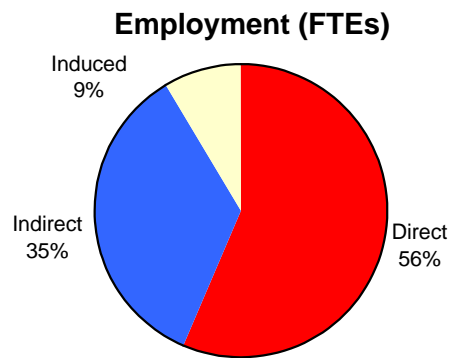
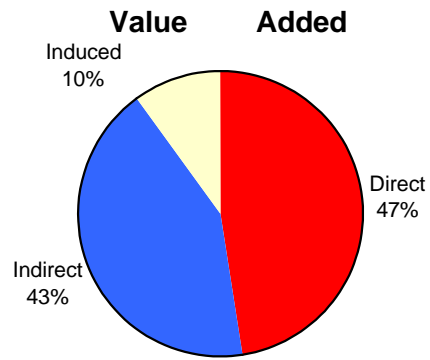
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	12.5	8.6	3.4	24.6
Indirect	4.4	6.9	2.3	13.6
Induced	1.5	1.5	0.6	3.6
<b>Total</b>	<b>18.4</b>	<b>17.0</b>	<b>6.3</b>	<b>41.7</b>
<i>Value Added (\$m)</i>				
Direct	4.5	2.3	0.9	7.7
Indirect	2.9	3.0	1.0	6.9
Induced	0.7	0.7	0.3	1.6
<b>Total</b>	<b>8.0</b>	<b>6.0</b>	<b>2.2</b>	<b>16.2</b>
<i>Employment (FTEs)</i>				
Direct	70	50	10	130
Indirect	20	40	30	90
Induced	10	10	0	20
<b>Total</b>	<b>100</b>	<b>100</b>	<b>40</b>	<b>240</b>

Direct impacts account for 47 percent of total value added impacts and 54 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**

Gisborne's economic prosperity is heavily dependent on agricultural and horticultural commodity prices. The outlook is currently favourable, given the low value of the \$NZ and the generally strong international economy. Strong demand for organic produce is likely to assist the region's horticultural industry. The forestry industry should make a particularly valuable contribution to growth, with the rapid expansion of supply forecast to continue.

The region's economy is somewhat vulnerable due to its lack of significant diversification, and any economic shock affecting commodity exports would impact the region significantly. Static population growth is also likely to dampen domestic demand.

## **6 HAWKE'S BAY**

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### **6.1 BACKGROUND AND CONTEXT**

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

Hawke's Bay's population is currently around 145,600, but the region is growing slower than the national inter-census average of 1.4 percent. Migration to other regions is largely responsible. Major industries in the region include fruit-growing, sheep, beef and mixed livestock farming, and food and beverages processing.

The current international environment should encourage growth in the strongly export-oriented Hawke's Bay. However dependence on primary commodity prices and static population growth make the region's economy somewhat vulnerable.

### **6.2 POPULATION AND EMPLOYMENT**

Hawke's Bay Region was home to 143,789 people at the time of the 1996 census. Its population grew at an annual average rate of approximately 0.8 percent between the 1991 and 1996 censuses, and is currently estimated at 145,600. It is growing somewhat slower than the national population, which grew at 1.4 percent annual average during the inter-census years. This is despite the high proportion of Maori in the region (23.2 percent), who tend to have a higher birth rate than non-Maori.

Migration to other regions is a major factor in the low growth rate. Most migrants have headed for larger centres with more education and employment opportunities, particularly Auckland, Waikato, the Bay of Plenty, and to a lesser extent Canterbury and Otago. By 2021, the region's population is forecast to be approximately the same as it is currently.

The population density of the region is fairly low at 10.1 people per square kilometre, compared to 13.1 nationally. Hawke's Bay is one of the most urbanised regions in the country, with 86.6 percent of people in urban centres. Although rural centres in the region have been losing population, the number of people living in areas outside urban or rural centres has grown, perhaps reflecting an increasing number of small horticultural holdings. The median age (33.8 years) is slightly higher than the national average, consistent with the majority of migrants being in younger age groups. However there is also a high proportion of children, reflecting the large Maori population which has a higher birth rate.

Employment in Hawke's Bay Region in 1998 was 54,740 FTEs, or 3.8 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 3.8 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 8,090 FTEs, 14.8 percent of the region's total employment.

Fishing and seafood processing businesses employ about 200 FTEs in the Hawke's Bay Region. This is about 0.4 percent of the region's total FTEs, and represents 2.0 percent of the industry total. The 85 business units in the industry average 2.4 FTEs each compared to 5.0 nationally.

### **6.3 ECONOMIC STRUCTURE**

Hawke's Bay Region's economy generated approximately \$3.5 billion of value-added in 1998. This represents 3.6 percent of New Zealand total. GDP growth has been slightly quicker than in the national economy overall, averaging 3.7 percent compared to 3.5 percent for New Zealand.

The region's economy is based on agriculture and horticulture. It is New Zealand's largest producer of apples, peaches, pears and plums, and second largest grape producer behind Marlborough. Horticulture in the region has annual GDP of about \$178 million and employs 4,660 FTEs. Sheep, beef and mixed livestock farming accounts for 3.5 percent (\$123 million) of GDP. However meat and meat products manufacturing adds even more value to the region's economy, approximately \$162 million annually. In total, food, beverages and tobacco processing has GDP of about

\$304 million, 8.7 percent of the Hawke's Bay total. Forestry is also a significant industry which has expanded rapidly in recent years as poor quality pastoral land is converted to plantation radiata pine.

**Table 6.1: Selected Hawke's Bay Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	8,090	388	11.1%
Horticulture	4,660	178	5.1%
Meat and Meat Products Manufacturing	3,070	162	4.6%
Finance	670	124	3.5%
Construction	3,400	123	3.5%
Sheep, Beef & Mixed Livestock	3,630	123	3.5%
<i>Seafood Industry</i>	200	12	0.3%

The fishing and seafood processing industry in Hawke's Bay has an annual output of about \$36.6 million. Relative to the size of the economy, the industry is less important to Hawke's Bay than it is to New Zealand overall. Seafood processing is a fairly minor part of the industry.

### **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 \$9.7 million in value added, or 79.3 percent of the total Hawke's Bay seafood industry value added. Output is around \$27.3 million. The sector employs 150 FTEs, 71.4 percent of total employment in the Hawke's Bay 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 0.2 percent of total seafood industry value added in Hawke's Bay. Total output is \$140,000. Employment is about 10 FTEs, or 4.8 percent of total Hawke's Bay seafood industry employment (Table 6.2).

### **Fish and Shellfish Processing**

Fish and shellfish processing contributes \$2.5 million of value added to the Hawke's Bay seafood industry, 20.4 percent of total seafood industry GDP. Annual processing output is \$9.2 million. The sector employs about 50 FTEs, with value added per FTE averaging a relatively low \$49,800 (Table 6.2).

**Table 6.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	27,260	140	9,190
Value Added (\$000)	9,670	30	2,490
Employment (FTEs)	150	10	50

### **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	1.59	1.97	1.95
Type II Multiplier	1.86	2.30	2.21
<i>Value Added Impacts</i>			
Type I Multiplier	2.37	3.33	2.75
Type II Multiplier	2.70	4.10	3.17
<i>Employment Impacts</i>			
Type I Multiplier	1.51	1.20	2.06
Type II Multiplier	1.88	1.27	2.45

**Ocean and Coastal Fishing and Fishing Consultants**

The majority of output from ocean and coastal fishing and fishing consultants (57.7 percent) is exported either directly overseas or to other regions. About \$3.5 million (12.9 percent) is consumed by the local fish and shellfish processing industry. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. A large amount (21.9 percent) also goes to the fruit and vegetable processing industry (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
Inter-regional and International Exports	15,730	57.7%
Fruit and Vegetable Processing	5,960	21.9%
Fish and Shellfish Processing	3,530	12.9%
Prepared Animal Feeds	390	1.4%
Motels, Hotels, Guest Houses, Camps and other Accommodation	320	1.2%
Other	1,330	4.9%
<b>TOTAL</b>	<b>27,260</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$16.4 million of value added, from output totalling \$23.3 million. This level of activity generates employment equivalent to an additional 140 FTEs (Table 6.7).

### **Fishing in Inland Waters and Fish Farming**

Part of the output of fishing in inland waters and fish farming (7.0 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 output (91.6 percent) is exported either overseas or to other regions (Table 6.5).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	130	91.6%
Fish and Shellfish Processing	10	7.0%
Other	0	1.4%
<b>TOTAL</b>	<b>140</b>	<b>100.0%</b>

The indirect and induced impact on the Hawke's Bay economy is estimated at \$80,000 value added, generated from output of \$190,000. The employment impact from this level of activity is negligible (Table 6.7).

### **Fish and Shellfish Processing**

About 88.6 percent of fish and shellfish processing output is exported either overseas or to other regions. The fruit and vegetable industry consumes a further \$3.2 million (1.6 percent) while all other industries between them account for the remaining 9.8 percent of output (Table 6.6).

**Table 6.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	171,040	88.6%
Fruit and Vegetable Processing	3,160	1.6%
Other	18,870	9.8%
<b>TOTAL</b>	<b>193,070</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing in Hawke's Bay total \$5.4 million of value added from output of \$11.1 million. The employment impact is 70 FTEs, 20 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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	27,260	140	9,190
Indirect	16,220	140	8,700
Induced	7,110	50	2,380
Total	50,590	320	20,280
% of Total Output	0.39%	0.00%	0.15%
<i>Value Added (\$000)</i>			
Direct	9,670	30	2,490
Indirect	13,290	60	4,360
Induced	3,120	20	1,040
Total	26,080	110	7,890
% of Total GDP	0.75%	0.00%	0.23%
<i>Employment (FTEs)</i>			
Direct	150	10	50
Indirect	80	0	50
Induced	60	0	20
Total	280	10	120
% of Total Employment	0.52%	0.01%	0.22%

### **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.

The only regionally significant forward linkage of the fishing sector of the Hawke's Bay seafood industry not already captured by fish and shellfish processing occurs in the fruit and vegetable processing industry. Approximately 3.1 percent (\$6.0 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 about \$1.3 million of value added (Table 6.8).

**Table 6.8: Major Direct Impacts of Fishing on Other Industries**

Source: McDermott Fairgray Group Ltd.

<b>Fruit and Vegetable Processing</b>	
Output (\$000)	193,070
Value Added (\$000)	42,430
Employment (FTEs)	1,120
<i>Estimated Seafood Industry Share</i>	
Output (\$000)	5,960
Value Added (\$000)	1,310
Employment (FTEs)	30

The indirect and induced impacts on value added, resulting from the share of fruit and vegetable processing attributable to the seafood industry, amount to \$3.1 million of value added. This level of activity sustains employment for some 65 FTEs. The total impact is a \$4.4 million contribution to GDP and 100 FTEs (Table 6.9).

**Table 6.9: Major Output, Value Added and Employment Impacts on Other Industries**

Source: McDermott Fairgray Group Ltd.

<b>Fruit and Vegetable Processing</b>	
<i>Output (\$000s)</i>	
Direct	5,960
Indirect	5,830
Induced	1,680
Total	13,470
% of Total Output	0.10%
<i>Value Added (\$000s)</i>	
Direct	1,310
Indirect	2,380
Induced	690
Total	4,380
% of Total GDP	0.13%
<i>Employment (FTEs)</i>	
Direct	30
Indirect	50
Induced	10
Total	90
% of Total Employment	0.18%

### 6.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Hawke's Bay seafood industry amount to \$37.1 million of value added and 470 FTEs (Table 6.10). The majority (70.6 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 \$24.0 million compared to direct impacts of \$13.2 million. The implied value added multiplier is 2.82. The corresponding employment multiplier is 2.04. These are significantly lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 6.10: Seafood Industry Impact Summary**

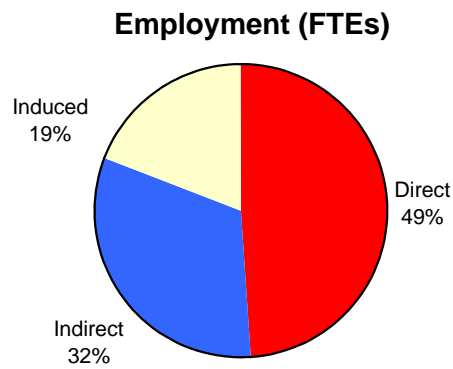
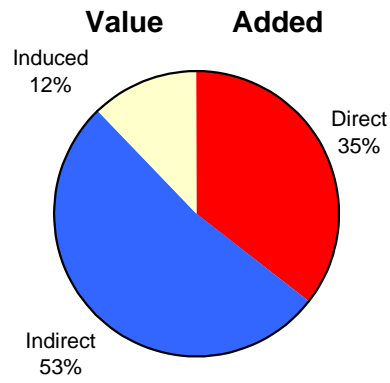
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	27.4	9.2	3.5	40.1
Indirect	16.4	8.7	3.4	28.4
Induced	7.2	2.4	0.9	10.5
<b>Total</b>	<b>50.9</b>	<b>20.3</b>	<b>7.8</b>	<b>79.0</b>
<i>Value Added (\$m)</i>				
Direct	9.7	2.5	1.0	13.2
Indirect	13.4	4.4	1.7	19.4
Induced	3.1	1.0	0.4	4.6
<b>Total</b>	<b>26.2</b>	<b>7.9</b>	<b>3.0</b>	<b>37.1</b>
<i>Employment (FTEs)</i>				
Direct	160	50	20	230
Indirect	80	50	20	150
Induced	60	20	10	90
<b>Total</b>	<b>300</b>	<b>120</b>	<b>50</b>	<b>470</b>

Direct impacts account for 35 percent of total value added impacts and 49 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 Hawke's Bay economy has a strong export focus, and is heavily dependent on agricultural and horticultural commodity prices. The outlook is currently favourable, given the low value of the \$NZ and the generally strong international economy. In addition, the substantial value added by secondary processing industries broadens the region's economic base somewhat. The forestry and viticulture industries should make particularly valuable contributions to growth, with the rapid expansion of supply forecast to continue.

The region's economy is somewhat vulnerable, and any economic shock affecting commodity exports would impact the region significantly. Static population growth is also likely to dampen domestic demand.

## **7 TARANAKI**

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### **7.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Taranaki Region's economy was \$3.2 billion. Between 1993 and 1998, the region's GDP actually declined by an annual average rate of about 2.7 percent, a sharp contrast with the national average of 3.5 percent growth.

Taranaki's population is currently around 105,600, and the region was the only region other than Southland to lose population in the inter-census years. Between 1991 and 1996 it grew at an annual average rate of –0.1 percent compared to the national inter-census average of 1.4 percent. The working-age population is a smaller proportion than the norm and the region is the most ethnically homogenous in the North Island with Europeans forming 91.1 percent of the population.

Taranaki's economy is somewhat fragile, relying as it does on just two major industries. However, these two industries, dairy farming and energy production, both look well-positioned to enjoy positive growth. Weak population growth may limit the expansion of sectors relying heavily on regional domestic demand.

### **7.2 POPULATION AND EMPLOYMENT**

Taranaki Region was home to 106,587 people at the time of the 1996 census, the second smallest North Island regional population, just Gisborne has fewer. Its population actually declined at an annual average rate of –0.1 percent between the 1991 and 1996 censuses, and is now estimated at about 105,600. By 2021 it is forecast to reach 96,700, an annual average growth of –0.4 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. Between 1991 and 1996 Taranaki lost 12,594 people to other regions, mostly to Manawatu-Wanganui, Waikato

and Auckland. Employment and educational opportunities are the most often cited motivation for migration to other regions.

The population is more rural than the national average, with 76.7 percent living in urban areas, reflecting the importance of agriculture in the region. About 58.6 percent of the population are of working age (15-59 years), compared to 61.6 percent nationally. Older age groups have actually been increasing in population, it is predominantly younger people leaving in search of better opportunities elsewhere.

Employment in Taranaki Region in 1998 was approximately 42,700 FTEs, or 2.9 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 3.3 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 3.4 percent, faster than the national average of 2.1 percent. Dairy farming is the largest employer, with 6,315 FTEs, 14.8 percent of the region's total employment. Other large employers include wholesale and retail trade (5,800 FTEs) construction (2,770 FTEs) and meat and meat products manufacturing (1,880 FTEs).

Fishing and seafood processing businesses employed about 60 FTEs in the Taranaki Region in 1998. This is about 0.2 percent of the region's total FTEs, and represents just 0.6 percent of the industry total. The 27 business units in the industry average 2.3 FTEs each compared to 5.0 nationally.

### **7.3 ECONOMIC STRUCTURE**

Taranaki Region's economy generated approximately \$3.2 billion of value-added in 1998. This represents 3.2 percent of New Zealand total. GDP shrank at an annual average of -2.7 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 Taranaki's population decline, the Taranaki Region averaging -2.6 percent compared to 2.1 percent nationally.

Dairy farming is the largest single industry in the Taranaki Region, with GDP of \$286 million. The regions soil and climate conditions are ideally suited to the industry, and dairy farming developed earlier in Taranaki than in any other region. During the 1960s,

the Taranaki economy added another major string to its bow; energy production. The five Taranaki fields Kapuni, Maui, McKee, Ngatoro and Waihapa/Ngaere are now responsible for all of New Zealand's hydrocarbon production. Higher order service industries are few due to the region's lack of a major city.

**Table 7.1: Selected Taranaki Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Dairy	6,320	286	9.0%
Wholesale and Retail Trade	5,800	278	8.7%
Oil and Gas Exploration and Extraction	520	232	7.3%
Petroleum, Coal and Basic Chemical Products	620	207	6.5%
Dairy Products	1,620	196	6.2%
Meat and Meat Products Manufacturing	1,880	89	2.8%
<i>Seafood Industry</i>	<i>60</i>	<i>3</i>	<i>0.1%</i>

The fishing and seafood processing industry in Taranaki has an annual output of about \$10.0 million. Relative to the size of the economy, the industry is less important to Taranaki than it is to New Zealand overall.

### **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 \$2.1 million in value added, or 64.4 percent of the total Taranaki seafood industry value added. Output is around \$5.8 million. The sector employs 30 FTEs, 50 percent of total employment in the Taranaki seafood industry (Table 7.2).

### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of \$50,000 in value added, or 1.6 percent of total seafood industry value added in Taranaki. Total output is \$250,000. The employment generated by this level of activity is about 10 FTEs (Table 7.2).

### **Fish and Shellfish Processing**

Fish and shellfish processing directly contributes \$1.1 million of value added to the Taranaki seafood industry, 34.1 percent of the seafood industry's GDP. Annual processing output is \$4.0 million. The sector employs about 20 FTEs, or 33.3 percent of the total Taranaki seafood industry workforce (Table 7.2).

**Table 7.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	5,810	250	4,020
Value Added (\$000)	2,060	50	1,090
Employment (FTEs)	30	10	20

### **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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output Impacts</i>			
Type I Multiplier	1.66	1.78	1.50
Type II Multiplier	1.91	2.06	1.68
<i>Value Added Impacts</i>			
Type I Multiplier	2.42	2.95	1.88
Type II Multiplier	2.73	3.61	2.17
<i>Employment Impacts</i>			
Type I Multiplier	1.53	1.15	1.61
Type II Multiplier	1.88	1.21	1.87

### **Ocean and Coastal Fishing and Fishing Consultants**

Part of output from ocean and coastal fishing and fishing consultants (8.0 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 is exported directly. The accommodation industry consumes 1.2 percent of output (Table 7.4).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	4,810	82.7%
Fish and Shellfish Processing	470	8.0%
Motels, Hotels, Guest Houses, Camps and other Accommodation	70	1.2%
Other	460	7.9%
<b>TOTAL</b>	<b>5,810</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$3.6 million of value added from output of \$5.3 million. This level of activity generates employment equivalent to an additional 30 FTEs (Table 7.7).

### **Fishing in Inland Waters and Fish Farming**

A small part of fishing in inland waters and fish farming output (3.9 percent) goes directly to fish and shellfish processing and therefore cannot be included in multiplier

analysis of this section of the industry. The remaining 96.1 percent of the industry mostly comprises exports (Table 7.5).

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

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	240	95.3%
Fish and Shellfish Processing	10	3.9%
Other	0	0.8%
<b>TOTAL</b>	<b>250</b>	<b>100.0%</b>

The indirect impact is about \$90,000 of value added. An additional \$30,000 is generated by the induced impact, for a total of \$120,000 value added. The employment impact is insignificant (Table 7.7).

### **Fish and Shellfish Processing**

The largest share (43.2 percent) of fish and shellfish processing output is exported internationally and to other regions. Restaurants, cafes and eateries consume 5.8 percent. Smaller amounts are utilised by the accommodation industry (2.8 percent), dairy farming (1.1 percent) and fertiliser and pesticides manufacturing (1.0 percent) (Table 7.6).

**Table 7.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	1,740	43.2%
Restaurants, Cafes and other Eating and Drinking Places	230	5.8%
Motels, Hotels, Guest Houses, Camps and other Accommodation	110	2.8%
Dairy Farming	40	1.1%
Fertilisers and Pesticides	40	1.0%
Other	1,860	46.3%
<b>TOTAL</b>	<b>4,020</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing total \$1.3 million value added, while in terms of output an extra \$2.7 million is generated. The employment impact is 20 FTEs, half 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.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	5,810	250	4,020
Indirect	3,830	200	2,010
Induced	1,470	70	710
<b>Total</b>	<b>11,120</b>	<b>520</b>	<b>6,750</b>
<b>% of Total Output</b>	<b>0.09%</b>	<b>0.00%</b>	<b>0.05%</b>
<i>Value Added (\$000)</i>			
Direct	2,060	50	1,090
Indirect	2,920	90	960
Induced	650	30	310
<b>Total</b>	<b>5,630</b>	<b>170</b>	<b>2,360</b>
<b>% of Total GDP</b>	<b>0.18%</b>	<b>0.01%</b>	<b>0.07%</b>
<i>Employment (FTEs)</i>			
Direct	30	10	20
Indirect	20	0	10
Induced	10	0	10
<b>Total</b>	<b>60</b>	<b>10</b>	<b>40</b>
<b>% of Total Employment</b>	<b>0.14%</b>	<b>0.03%</b>	<b>0.09%</b>

**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 these impacts are not large enough to be significant in the Taranaki region.

**7.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS**

Total direct, indirect and induced impacts of the Taranaki seafood industry amount to \$8.2 million of value added and 110 FTEs (Table 7.8). The majority (71.1 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 this 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 \$5.0 million compared to direct impacts of \$3.2 million. The implied value added multiplier is 2.55. The corresponding employment multiplier is 1.83. These are considerably lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 7.8: Seafood Industry Impact Summary**

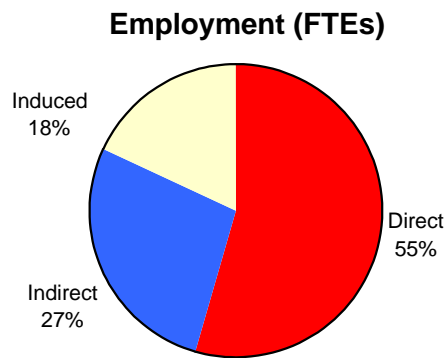
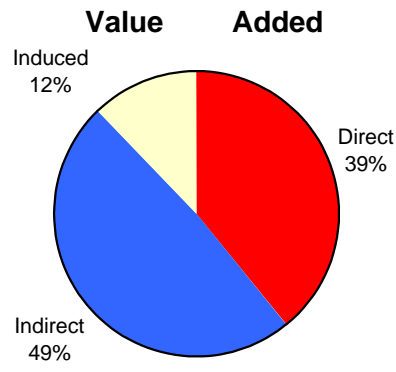
Source: McDermott Fairgray Group Ltd.

	<b>Fishing Impacts</b>	<b>Fish &amp; Shellfish Processing Impacts</b>	<b>TOTAL</b>
<i>Output (\$m)</i>			
Direct	6.1	4.0	10.1
Indirect	4.0	2.0	6.0
Induced	1.5	0.7	2.3
<b>Total</b>	<b>11.6</b>	<b>6.7</b>	<b>18.4</b>
<i>Value Added (\$m)</i>			
Direct	2.1	1.1	3.2
Indirect	3.0	1.0	4.0
Induced	0.7	0.3	1.0
<b>Total</b>	<b>5.8</b>	<b>2.4</b>	<b>8.2</b>
<i>Employment (FTEs)</i>			
Direct	40	20	60
Indirect	20	10	30
Induced	10	10	20
<b>Total</b>	<b>70</b>	<b>40</b>	<b>110</b>

Direct impacts account for 39 percent of total value added impacts and 55 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**

Taranaki's economy is driven by just two industries, dairy farming and energy production. Its economic outlook is therefore entirely dependent on how these industries fare. In recent years Taranaki has suffered from this lack of a broad economic base due to poor agricultural commodity prices, and longer term, the Maui oil and gas field is expected to run out in 2006.

However, encouraging signs for the region's economy are emerging. In common with other rural regions, the weak \$NZ and strong economies of our major trading partners are encouraging export growth. In addition, dairy product prices have held up well compared to other agricultural commodities in recent years.

In contrast with dairy farming, energy production is domestically rather than export oriented, and is supply rather than demand constrained. Recent discoveries of major new oil and gas fields augur well for an industry whose day's appeared numbered not long ago.

## **8 MANAWATU-WANGANUI**

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### **8.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Manawatu-Wanganui Region's economy was \$5.3 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 1.2 percent, significantly slower than the national average of 3.5 percent.

Manawatu-Wanganui's population is currently around 230,400, but the region is growing slower than the national inter-census average of 1.4 percent. Migration to the northern regions is partly responsible. Major industries in the region include education, central government services and sheep, beef and mixed livestock farming.

The economic outlook for Manawatu-Wanganui is not strong. Education and central government services are not expected to experience growth, while stagnant population growth weakens regional demand for goods and services. If agricultural commodity prices do not increase over coming years, it will be difficult for the region to prosper greatly.

### **8.2 POPULATION AND EMPLOYMENT**

Manawatu-Wanganui Region was home to 228,780 people at the time of the 1996 census, the fifth largest regional population in the country. Its population grew at an annual average rate of approximately 0.4 percent between the 1991 and 1996 censuses, and is currently estimated at 230,400. It is growing slower than the national population, which grew at 1.4 percent annual average during the inter-census years. This is despite the high proportion of Maori in the region (18.1 percent), who tend to have a higher birth rate than non-Maori. The region has lost population to the north, in particular Auckland, Waikato and the Bay of Plenty.

The population density of the region is fairly low at 10.3 people per square kilometre, compared to 13.1 nationally. Although Palmerston North City and its surrounding environs are expected to experience moderate growth, more rural districts such as

Stratford District and Ruapehu District are losing population. The working age population is proportionately smaller than the national average with the exception of the 15-24 year age group, due to large student and military populations.

Employment in Manawatu-Wanganui Region in 1998 was 85,172 FTEs, or 5.7 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. The wholesale and retail industry is the largest employer, with 12,850 FTEs, 15.1 percent of the region's total employment.

Fishing and seafood processing businesses employ about 220 FTEs in the Manawatu-Wanganui Region. This is about 0.3 percent of the region's total FTEs, and represents 2.1 percent of the industry total. The 19 business units in the industry average 11.4 FTEs each, far higher than the national average of 5.0 FTEs nationally.

### **8.3 ECONOMIC STRUCTURE**

Manawatu-Wanganui 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.

Education is a major industry in the Manawatu-Wanganui Region. It generates GDP of \$269 million, and with 8,920 FTEs is the second largest industry behind wholesale and retail trade with 12,850 FTEs. There are three military bases in the region, which make central government services an important part of the regional economy with annual GDP of about \$374 million. Agriculture has historically been the region's mainstay. Sheep, beef and mixed livestock farming provide 4.3 percent (\$227 million) of the region's GDP. Vegetable production is also widespread, particularly potatoes.

**Table 8.1: Selected Manawatu-Wanganui Industries**

Source: McDermott Fairgray Group Ltd.

<b>Industry</b>	<b>FTEs</b>	<b>GDP (\$millions)</b>	<b>GDP Share of Total</b>
Wholesale and Retail Trade	12,850	616	11.7%
Central Government Services	5,070	374	7.1%
Education	8,920	269	5.1%
Sheep, Beef & Mixed Livestock	6,690	227	4.3%
Construction	5,040	187	3.6%
Finance	1,030	150	2.9%
<i>Seafood Industry</i>	<i>220</i>	<i>11</i>	<i>0.2%</i>

The fishing and seafood processing industry in Manawatu-Wanganui has an annual output of about \$40.7 million. Relative to the size of the economy, the industry is less important to Manawatu-Wanganui than it is to New Zealand overall.

### **8.3.1 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 8.2.

#### **Ocean and Coastal Fishing and Fishing Consultants**

The direct impact of ocean and coastal fishing and fishing consultants is \$970,000 in value added, or 8.6 percent of the total Manawatu-Wanganui seafood industry value added. Output is around \$2.7 million. The sector employs 20 FTEs, 9.1 percent of total employment in the Manawatu-Wanganui seafood industry (Table 8.2).

#### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of just \$20,000 in value added, or 0.2 percent of total seafood industry value added in Manawatu-Wanganui. Total output is \$110,000. The employment generated by this level of activity is insignificant (Table 8.2).

### **Fish and Shellfish Processing**

Fish and shellfish processing contributes \$10.3 million of value added to the Manawatu-Wanganui seafood industry, 91.2 percent of total seafood industry GDP. Annual processing output is \$37.9 million. The sector employs about 200 FTEs, with value added per FTE averaging around \$51,300 (Table 8.2).

**Table 8.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	2,730	110	37,910
Value Added (\$000)	970	20	10,260
Employment (FTEs)	20	0	200

### **8.3.2 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 8.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

**Table 8.3: 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	1.16	1.75	1.39
Type II Multiplier	1.24	2.05	1.56
<i>Value Added Impacts</i>			
Type I Multiplier	1.19	2.74	1.61
Type II Multiplier	1.29	3.45	1.89
<i>Employment Impacts</i>			
Type I Multiplier	1.19	1.16	1.51
Type II Multiplier	1.30	1.23	1.78

**Ocean and Coastal Fishing and Fishing Consultants**

The largest portion of output from ocean and coastal fishing and fishing consultants (42.8 percent) is exported either directly overseas or to other regions. About \$1.0 million (38.0 percent) is consumed by the local fish and shellfish processing industry. Indirect and induced impacts from this portion are calculated as part of fish and shellfish processing impacts, otherwise double-counting would occur. Smaller amounts are consumed by fruit and vegetable processing industry (5.0 percent), prepared animal feeds (2.0 percent) and the accommodation industry (1.4 percent) (Table 8.4).

**Table 8.4: 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	1,170	42.8%
Fish and Shellfish Processing	1,040	38.0%
Fruit and Vegetable Processing	140	5.0%
Prepared Animal Feeds	60	2.0%
Motels, Hotels, Guest Houses, Camps and other Accommodation	40	1.4%
Other	290	10.8%
<b>TOTAL</b>	<b>2,730</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$290,000 of value added from output of \$640,000. This level of activity is not sufficient to generate significant employment (Table 8.7).

### Fishing in Inland Waters and Fish Farming

Part of the output of fishing in inland waters and fish farming (18.5 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 (80.3 percent) is exported either overseas or to other regions (Table 8.5).

**Table 8.5: 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	80.3%
Fish and Shellfish Processing	20	18.5%
Other	0	1.2%
<b>TOTAL</b>	<b>110</b>	<b>100.0%</b>

The indirect and induced impact on the Manawatu-Wanganui economy is estimated at \$50,000 value added, generated from output of \$110,000. The employment impact from this level of activity is negligible.

### Fish and Shellfish Processing

About 70.0 percent of fish and shellfish processing output is exported either overseas or to other regions. Restaurants, cafes and other eateries consume a further 8.3 percent, the accommodation industry 3.2 percent, and cropping 3.0 percent. About \$880,000 (2.3 percent) flows directly back into the fish and shellfish processing industry itself (Table 8.6).

**Table 8.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

Industry Description	Output (\$000)	% of Total
Inter-regional and International Exports	26,540	70.0%
Restaurants, Cafes and other Eating and Drinking Places	3,130	8.3%
Motels, Hotels, Guest Houses, Camps and other Accommodation	1,230	3.2%
Cropping	1,160	3.0%
Fish and Shellfish Processing	880	2.3%
Prepared Animal Feeds	810	2.1%
Other	4,160	11.0%
<b>TOTAL</b>	<b>37,910</b>	<b>100.0%</b>

The indirect and induced economic impacts of fish and shellfish processing in Manawatu-Wanganui total \$9.2 million of value added from output of \$21.4 million. The employment impact is 150 FTEs, 50 of which result from induced impacts (Table 8.7).

**Table 8.7: 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	2,730	110	37,910
Indirect	420	80	14,720
Induced	220	30	6,640
Total	3,370	230	59,270
% of Total Output	0.02%	0.00%	0.32%
<i>Value Added (\$000)</i>			
Direct	970	20	10,260
Indirect	190	40	6,280
Induced	100	10	2,880
Total	1,250	70	19,430
% of Total GDP	0.02%	0.00%	0.37%
<i>Employment (FTEs)</i>			
Direct	20	0	200
Indirect	0	0	100
Induced	0	0	50
Total	20	0	350
% of Total Employment	0.02%	0.01%	0.41%

### 8.3.3 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 Manawatu-Wanganui 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 1.6 percent (\$1.2 million) of cropping industry output and 2.1 percent (\$810,000) of prepared animal feed industry output is attributable to the processing sector of the seafood industry. The direct economic impact is value added of \$600,000, although the number of additional FTEs is not significant (Table 8.8).

**Table 8.8: Major Direct Impacts of Fish and Shellfish Processing Flow-on Industries**

Source: McDermott Fairgray Group Ltd.

	<b>Cropping</b>	<b>Prepared Animal Feeds</b>
Output (\$000)	73,440	39,300
Value Added (\$000)	30,410	5,900
Employment (FTEs)	150	120
<i>Estimated Seafood Industry Share</i>		
Output (\$000)	1,160	810
Value Added (\$000)	480	120
Employment (FTEs)	0	0

The indirect and induced economic impacts of fish and shellfish industry flow-on effects total \$760,000 of value added. Most of this (\$500,000) is due to fish and shellfish processing inputs into the cropping industry. About 10 FTEs are generated by indirect impacts (Table 8.9).

**Table 8.9: Fish and Shellfish Processing Flow-on Output, Value Added and Employment Impacts**

Source: McDermott Fairgray Group Ltd.

	<b>Cropping</b>	<b>Prepared Animal Feeds</b>
<i>Output (\$000s)</i>		
Direct	1,160	810
Indirect	930	800
Induced	210	230
Total	2,290	1,840
% of Total Output	0.0%	0.0%
<i>Value Added (\$000s)</i>		
Direct	480	120
Indirect	410	200
Induced	90	60
Total	970	380
% of Total GDP	0.0%	0.0%
<i>Employment</i>		
Direct	0	0
Indirect	10	0
Induced	0	0
Total	10	0
% of Total Employment	0.0%	0.0%

### 8.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS

Total direct, indirect and induced impacts of the Manawatu-Wanganui seafood industry amount to \$22.2 million of value added and 380 FTEs (Table 8.10). The majority (87.5 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 \$10.3 million compared to direct impacts of \$11.9 million. The implied value added multiplier is 1.87. The corresponding employment multiplier is 1.73. These are much lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 8.10: Seafood Industry Impact Summary**

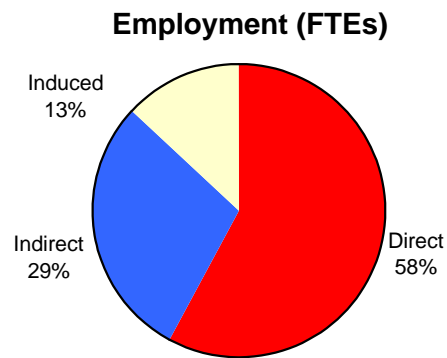
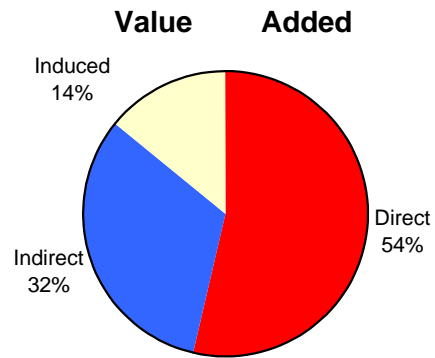
Source: McDermott Fairgray Group Ltd.

	Fishing Impacts	Fish & Shellfish Processing Impacts	Forward Linkage Impacts	TOTAL
<i>Output (\$m)</i>				
Direct	2.8	37.9	2.1	42.9
Indirect	0.5	14.7	1.9	17.1
Induced	0.3	6.6	0.5	7.4
<b>Total</b>	<b>3.6</b>	<b>59.3</b>	<b>4.4</b>	<b>67.3</b>
<i>Value Added (\$m)</i>				
Direct	1.0	10.3	0.6	11.9
Indirect	0.2	6.3	0.7	7.2
Induced	0.1	2.9	0.2	3.2
<b>Total</b>	<b>1.3</b>	<b>19.4</b>	<b>1.4</b>	<b>22.2</b>
<i>Employment (FTEs)</i>				
Direct	20	200	0	220
Indirect	0	100	10	110
Induced	0	50	0	50
<b>Total</b>	<b>20</b>	<b>350</b>	<b>10</b>	<b>380</b>

Direct impacts account for 54 percent of total value added impacts and 58 percent of employment impacts (Figure 8.1 overleaf).

**Figure 8.1: Direct, Indirect and Induced Value Added and Employment**

Source: McDermott Fairgray Group



## **8.4 ECONOMIC OUTLOOK**

The economic outlook for the Manawatu-Wanganui Region is mixed. The education sector may stagnate as tertiary institutions around the country suffer from falling enrolments due to fewer school-leavers, with the exception of the rapidly growing Auckland Region. There is also pressure to reduce military expenditure and consolidate bases. Weak population growth in the region will hinder the growth of the important construction and retail industries. However the agricultural industry in the region should benefit from the low value of the \$NZ spurring export demand, and from the positive international economic environment.

## **9 WELLINGTON**

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### **9.1 BACKGROUND AND CONTEXT**

In 1998 the GDP of Wellington Region's economy was \$12.3 billion. Between 1993 and 1998, the region's GDP grew at an annual average rate of 2.2 percent, somewhat slower than the national average of 3.5 percent.

Wellington's population is currently around 429,000, and the region is the third largest in the country behind Auckland and Canterbury. Between 1991 and 1996 it grew at an annual average rate of 0.7 percent compared to the national inter-census average of 1.4 percent. The region has the highest proportion of the 24-39 year age group, and the most highly qualified workforce. The Maori population is proportionately smaller than average, although other ethnic minorities are over-represented.

The economic outlook for Wellington is favourable. Its status as the capital city means that many companies choose to locate head offices there, and the associated higher-order services which form the regions major industries are much less subject to the vicissitudes of international and domestic markets.

### **9.2 POPULATION AND EMPLOYMENT**

Wellington Region was home to 414,048 people at the time of the 1996 census, the third largest regional population in the country. Its population grew at an annual average rate of approximately 0.7 percent between the 1991 and 1996 censuses, and is now estimated at about 429,000. By 2021 it is forecast to reach 433,000, an annual average growth of just 0.2 percent.

A major cause Wellington's slow population growth is migration. Between the 1991 and 1996 censuses Wellington lost population to every region apart from Southland, Otago and Taranaki. However, the region has had significant net gains in the 15-39 year age group, due to the higher-order employment opportunities created by Wellington's status as the centre of Government and home of many company head offices. Intra-regional

growth patterns show divergent trends. Kapiti Coast and Wellington City are forecast to experience reasonable growth, while Porirua City, Upper Hutt City and Lower Hutt City are expected to lose population.

The region's proportion of Maori is 12.5 percent compared to 15.1 percent nationally, although Pacific Islanders comprise 7.4 percent of the population compared to 5.8 percent nationally. Proportions of the young and the elderly are lower than nationally. The Wellington Region has the highest qualified population, with 17.3 percent of adults having bachelors degrees and 9.6 percent higher degrees. This reflects the employment opportunities offered by the higher-order service industries in the capital city.

Employment in Wellington Region in 1998 was approximately 185,600 FTEs, or 12.4 percent of employment in New Zealand. The region's economy generated employment growth at an annual average rate of 3.0 percent in the years 1993 – 1998, compared to 4.1 percent for New Zealand. The wholesale and retail industry is the largest employer, with 28,400 FTEs, 15.3 percent of the region's total employment. Other large employers include business services (22,360 FTEs) and education (16,210 FTEs).

Fishing and seafood processing businesses employ about 500 FTEs in the Wellington Region. This is about 0.3 percent of the region's total FTEs, and represents 4.8 percent of the industry total. The 141 business units in the industry average 3.5 FTEs each compared to 5.0 nationally.

### **9.3 ECONOMIC STRUCTURE**

Wellington Region's economy generated approximately \$12.3 billion of value-added in 1998. This represents 12.5 percent of New Zealand total. GDP growth has been below that in the national economy overall, averaging 2.2 percent compared to 3.5 percent for New Zealand between 1993 and 1998. On a per capita basis the difference is less due to Wellington's slower population growth, the Wellington Region averaging 1.5 percent compared to 2.1 percent nationally.

Wholesale and retail is the largest single industry in the Wellington Region, with GDP of \$1.4 billion. Finance and business services are major industries generating GDP of

approximately \$959 million and \$948 million respectively. Other major service industries include communications and central government.

Manufacturing is much less prevalent in Wellington than in New Zealand's two other major cities Auckland and Christchurch. This is because of the dominance of head office and central government functions. However the region has a large printing and publishing media, due to the high media presence associated with the seat of government.

**Table 9.1: Selected Wellington Industries**

Source: McDermott Fairgray Group Ltd.

Industry	FTEs	GDP (\$millions)	GDP Share of Total
Wholesale and Retail Trade	28,470	\$ 1,366	11.1%
Finance	7,390	\$ 959	7.8%
Business Services	22,360	\$ 948	7.7%
Communications Services	4,950	\$ 771	6.3%
Central Government Services	9,960	\$ 734	6.0%
Education	16,210	\$ 486	4.0%
<i>Seafood Industry</i>	<i>500</i>	<i>\$ 27</i>	<i>0.2%</i>

The fishing and seafood processing industry in Wellington has an annual output of about \$89.5 million. Relative to the size of the economy, the industry is less important to Wellington than it is to New Zealand overall.

### **9.3.1 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 9.2.

#### **Ocean and Coastal Fishing and Fishing Consultants**

The direct impact of ocean and coastal fishing and fishing consultants is \$13.7 million in value added, or 49.9 percent of the total Wellington seafood industry value added.

Output is around \$38.5 million. The sector employs 210 FTEs, 42.9 percent of total employment in the Wellington seafood industry (Table 9.2).

### **Fishing in Inland Waters and Fish Farming**

Fishing in inland waters and fish farming has a direct impact of \$110,000 in value added, or 0.4 percent of total seafood industry value added in Wellington. Total output is \$590,000. The employment generated by this level of activity is about 20 FTEs (Table 9.2).

### **Fish and Shellfish Processing**

Fish and shellfish processing directly contributes \$13.6 million of value added to the Wellington seafood industry, 49.7 percent of the seafood industry's GDP. Annual processing output is \$50.4 million. The sector employs about 260 FTEs, or 53.1 percent of the total Wellington seafood industry workforce (Table 9.2).

**Table 9.2: Direct Impacts of Seafood Industry**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
Output (\$000)	38,520	590	50,360
Value Added (\$000)	13,670	110	13,630
Employment (FTEs)	210	20	260

### **9.3.2 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 9.3 presents the multipliers used to calculate indirect and induced value added and employment impacts.

**Table 9.3: 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	1.79	2.11	1.79
Type II Multiplier	2.00	2.52	2.04
<i>Value Added Impacts</i>			
Type I Multiplier	1.81	3.61	2.19
Type II Multiplier	2.06	4.57	2.60
<i>Employment Impacts</i>			
Type I Multiplier	1.67	1.22	1.91
Type II Multiplier	1.96	1.31	2.28

### Ocean and Coastal Fishing and Fishing Consultants

A large part of output from ocean and coastal fishing and fishing consultants (23.1 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 9.4).

**Table 9.4: 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	26,300	68.3%
Fish and Shellfish Processing	8,900	23.1%
Motels, Hotels, Guest Houses, Camps and other Accommodation	430	1.1%
Other	2,870	7.5%
<b>TOTAL</b>	<b>38,520</b>	<b>100.0%</b>

The indirect and induced impacts of ocean and coastal fishing and fishing consultants amount to \$14.4 million of value added from output of \$38.3 million. This level of activity generates employment equivalent to an additional 200 FTEs (Table 9.7).

### **Fishing in Inland Waters and Fish Farming**

Around 11.3 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. Almost the entire remaining output is exported to other regions or overseas, while 1.7 percent is consumed by all other industries (Table 9.5).

**Table 9.5: Consumption of Fishing in Inland Waters and Fish Farming Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	510	87.6%
Fish and Shellfish Processing	70	11.3%
Other	10	1.7%
<b>TOTAL</b>	<b>590</b>	<b>100.0%</b>

The indirect impact is estimated at some \$290,000. An additional \$100,000 is generated by the induced impact, for a total of \$390,000 million value added. The employment impact of this level of activity is insignificant (Table 9.7).

### **Fish and Shellfish Processing**

About 72.5 percent of fish and shellfish processing output is exported inter-regionally and internationally. Restaurants, cafes and eateries consume 8.2 percent, and the accommodation industry 2.5 percent. A substantial amount (\$710,000 or 1.4 percent) flows back into the fish and shellfish processing industry itself. All other industries consume the remaining 15.4 percent (Table 9.6).

**Table 9.6: Consumption of Fish and Shellfish Processing Output**

Source: McDermott Fairgray Group Ltd.

<b>Industry Description</b>	<b>Output (\$000)</b>	<b>% of Total</b>
Inter-regional and International Exports	36,520	72.5%
Restaurants, Cafes and other Eating and Drinking Places	4,110	8.2%
Motels, Hotels, Guest Houses, Camps and other Accommodation	1,280	2.5%
Fish and Shellfish Processing	710	1.4%
Other	7,740	15.4%
<b>TOTAL</b>	<b>50,360</b>	<b>100.0%</b>

The indirect and induced value added and employment impacts of fish and shellfish processing amount to \$21.8 million and 340 FTEs. Total indirect and induced output is \$52.4 million, or 0.3 percent of the Wellington region's annual output (Table 9.7).

**Table 9.7: Seafood Industry Output, Value Added and Employment Impacts**

Source: McDermott Fairgray Group Ltd.

	<b>Ocean and Coastal Fishing and Fishing Consultants</b>	<b>Fishing in Inland Waters and Fish Farming</b>	<b>Fish and Shellfish Processing</b>
<i>Output (\$000)</i>			
Direct	38,520	590	50,360
Indirect	30,450	650	39,850
Induced	7,890	240	12,550
<b>Total</b>	<b>76,860</b>	<b>1,480</b>	<b>102,760</b>
<b>% of Total Output</b>	<b>0.18%</b>	<b>0.00%</b>	<b>0.25%</b>
<i>Value Added (\$000)</i>			
Direct	13,670	110	13,630
Indirect	11,010	290	16,290
Induced	3,430	100	5,470
<b>Total</b>	<b>28,110</b>	<b>500</b>	<b>35,390</b>
<b>% of Total GDP</b>	<b>0.23%</b>	<b>0.00%</b>	<b>0.29%</b>
<i>Employment (FTEs)</i>			
Direct	210	20	260
Indirect	140	0	240
Induced	60	0	100
<b>Total</b>	<b>420</b>	<b>30</b>	<b>600</b>
<b>% of Total Employment</b>	<b>0.22%</b>	<b>0.01%</b>	<b>0.32%</b>

### **9.3.3 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 Wellington these impacts are not large enough to be significant.

### **9.3.4 TOTAL SEAFOOD INDUSTRY IMPACTS**

Total direct, indirect and induced impacts of the Wellington seafood industry amount to \$64.0 million of value added and 1,030 FTEs (Table 9.8). The majority (55.3 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 \$36.6 million compared to direct impacts of \$27.4 million. The implied value added multiplier is 2.33. The corresponding employment multiplier is 2.10. These are significantly lower than the national average value added and employment multipliers of 3.17 and 2.53 respectively.

**Table 9.8: Seafood Industry Impact Summary**

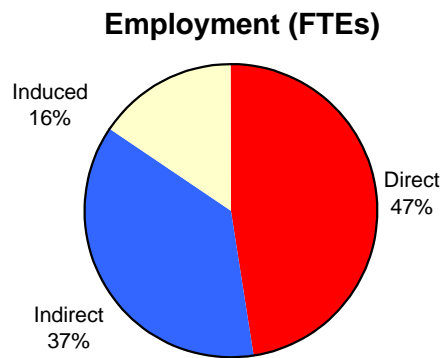
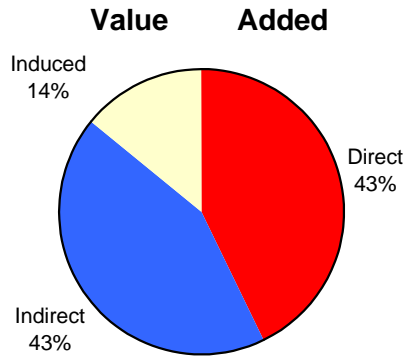
Source: McDermott Fairgray Group Ltd.

	<b>Fishing Impacts</b>	<b>Fish &amp; Shellfish Processing Impacts</b>	<b>TOTAL</b>
<i>Output (\$m)</i>			
Direct	39.1	50.4	89.5
Indirect	31.1	39.9	71.0
Induced	8.1	12.6	20.7
<b>Total</b>	<b>78.3</b>	<b>102.8</b>	<b>181.1</b>
<i>Value Added (\$m)</i>			
Direct	13.8	13.6	27.4
Indirect	11.3	16.3	27.6
Induced	3.5	5.5	9.0
<b>Total</b>	<b>28.6</b>	<b>35.4</b>	<b>64.0</b>
<i>Employment (FTEs)</i>			
Direct	230	260	490
Indirect	140	240	380
Induced	60	100	160
<b>Total</b>	<b>430</b>	<b>600</b>	<b>1,030</b>

Direct impacts account for 43 percent of total value added impacts and 47 percent of employment impacts (Figure 9.1 overleaf).

**Figure 9.1: Direct, Indirect and Induced Value Added and Employment**

Source: McDermott Fairgray Group



## **9.4 ECONOMIC OUTLOOK**

The Wellington Region's economy is less dependent on the international commodity prices than most other regions in New Zealand. The functions of most major employers in the region are such that the regional economy is somewhat insulated from the economic fortunes of the rest of the country, providing a stable economic platform. The well-documented trend towards service industries becoming the major drivers of growth in developed economies would appear to indicate that Wellington is well-positioned to prosper.

Slow population growth may hinder growth in the region, particularly in industries such as retailing and construction which are highly sensitive to domestic demand. In addition, the much faster expansion of Auckland may encourage more businesses to relocate their head offices to the northern metropolis. However, the general economic outlook for the regions seems positive, bolstered by its status as the nation's capital.