

**THE NORTH COAST MULTI-DAY  
NATURE-BASED TOURISM  
INDUSTRY:  
AN ECONOMIC PROFILE**

**JULY, 2003**

Prepared for:

**North Coast Backcountry Caucus**

Prepared by:

**Pacific Analytics Inc.**



***Pacific Analytics Inc.***

P.O. Box 5103 Stn. B

Victoria, B. C. Canada V8R 6N3

Voice/Fax: (250) 370-1775

Email: [pacanalytics@pacificcoast.net](mailto:pacanalytics@pacificcoast.net)

# **TABLE OF CONTENTS**

<b>EXECUTIVE SUMMARY .....</b>	<b>i</b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>1.1 Overview .....</b>	<b>1</b>
<b>1.2 Approach .....</b>	<b>2</b>
<b>2.0 RESULTS.....</b>	<b>4</b>
<b>2.1 Commercial Multi-Day Nature-Based Tourism .....</b>	<b>5</b>
2.1.1 Commercial Multi-Day, Nature-Based Tourist Operations .....	5
2.1.2 Capital Investment Activities .....	9
<b>2.2 Client Travel to/from MDNB Facilities .....</b>	<b>9</b>
2.2.1 Economic Impacts of Travel to/from Prince Rupert .....	9
2.2.2 The Economic Impacts of Client Spending in Prince Rupert.....	10
<b>2.3 Economic Impacts Additional Spending in Other Regions of BC.....</b>	<b>11</b>
<b>2.4 Aggregate Economic Impacts of MDNB Tourism on the North Coast.....</b>	<b>12</b>
<b>2.5 Direct Wage Impacts on the City of Prince Rupert.....</b>	<b>13</b>
2.5.1 Direct Wage Impacts of Client Spending on Prince Rupert.....	13
2.5.2 Employee Wage Impacts on Prince Rupert.....	13
2.5.3 The Direct Wage Impacts of Operation Purchases on Prince Rupert.....	13
2.5.4 Total Direct Wage Impacts on Prince Rupert.....	14
<b>3.0 CONCLUSION.....</b>	<b>14</b>
<b>APPENDIX A: An Input-Output Primer .....</b>	<b>A1</b>

## **Listing of Exhibits**

Exhibit 1: Common Format Financial Statement .....	5
Exhibit 2: Input-Output Table for MDNB Tourism, 2002.....	6
Exhibit 3: Economic Impacts of Multi-Day, Nature-Based Tourism, 2002.....	7
Exhibit 4: Economic Impacts of Capital Investment Activities, 2002.....	9
Exhibit 5: Economic Impacts of Clients Flying to/from Prince Rupert, 2002.....	10
Exhibit 6: Babine Client Spending in Smithers .....	11
Exhibit 7: Economic Impacts of Client Spending in Prince Rupert, 2002.....	11
Exhibit 8: Economic Impacts of Additional Spending in Other Regions of BC, 2002 .....	12
Exhibit 9: Aggregate Impacts of MDNB Tourism, 2002 .....	12

## EXECUTIVE SUMMARY

The recent *Base Case Socio-Economic Report* prepared for the North Coast LRMP found that the total value (revenues) of nature-based tourism in the Prince Rupert area was worth approximately \$6.0 million in 2000 and, of that, fishing lodges and boat charters were valued at \$4.2 million.

The findings of this report suggest that these estimates grossly under-estimate the true value of nature-based tourism to Prince Rupert, and that the real impacts are many times that value. This report has taken detailed financial information from 13 companies, 7 fishing lodges and 6 boat charters, operating on the North Coast and, following the exact methodology that Statistics Canada uses to estimate the economic impacts of forestry and mining, estimates the true value of multi-day (catering to overnight visitors) fishing lodges and boat charters. The following summarizes the findings.

- The analysis indicates that tourists (over 90% of whom are non-BC residents) spent at least \$17.02 million (\$15.69 million excluding taxes) in the year 2002 with multi-day nature-based tourism operators located on the coastal region near Prince Rupert. This excludes spending by recreational visitors using the area for personal sport fishing and excludes any spending by clients in Prince Rupert, travelling to/from the Prince Rupert region, or in other regions of the province. Given the high proportion of non-resident clients, this spending represents a significant export of BC services.
- Aggregating all activities by operators and clients of multi-day, nature-based tourism operators (lodge and boat operations, investment in fixed assets, client travel to/from Prince Rupert, client spending in Prince Rupert, and client spending in other regions of the province), spending (excluding taxes) reached \$22.60 million. Including the indirect and induced impacts, spending (excluding taxes) reached \$33.22 million.
- The contribution of multi-day, nature-based tourism on the coast of Prince Rupert to local direct GDP is estimated at \$5.61 million, direct employment at 83.0 F.T.E.s (headcount of 181 employees) and direct provincial government revenues at \$553,000.
- Total (direct + indirect + induced) contribution of tourism operators to provincial GDP is estimated at \$9.21 million, total employment at 143.2 F.T.E.s and total provincial government revenues at \$838,000.
- Multi-day, nature-based tourism is responsible for approximately \$2.5 million in additional direct wages and salaries in the Prince Rupert economy.
- Excluding recreational visitors, operators in the year 2002 registered at least 4,095 clients and 18,604 client-days. Average spending by these clients reached \$915 per day (including all taxes), far above the average non-resident tourist expenditures of less than \$100 per day in the province as a whole.

- Exec Exhibit 1 below highlights the economic impacts of multi-day, nature-based tourism operations for 2002.

**Exec Exhibit 1: Impacts of Multi-Day, Nature-Based Tourism Operations, 2002**

	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>TOTAL</b>
<b>Tourist Expenditure</b>	\$17,020,000			
<b>Commercial Tourism Output</b>	\$15,686,000	\$4,056,000	\$1,005,000	<b>\$20,747,000</b>
<b>GDP (Value-Added)</b>	\$5,605,000	\$1,759,000	\$1,848,000	<b>\$9,212,000</b>
<b>Employment (FTEs)</b>	83.0	31.2	29.0	<b>143.2</b>
<b>Provincial Taxes and Levies</b>	\$553,000	\$202,000	\$83,000	<b>\$838,000</b>

- Exec Exhibit 2 displays the estimated impacts of the investment in structures and machinery and equipment which multi-day, nature-based tourism operators

**Exec Exhibit 2: Impacts of Capital Investment in Fixed Assets by Operators, 2002**

	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>TOTAL</b>
<b>Investment Expenditure</b>	\$397,000			
<b>Investment Output</b>	\$380,000	\$161,000	\$55,000	<b>\$596,000</b>
<b>GDP (Value-Added)</b>	\$315,000	\$73,000	\$31,000	<b>\$419,000</b>
<b>Employment (FTEs)</b>	3.0	1.3	1.2	<b>5.5</b>
<b>Provincial Taxes and Levies</b>	\$17,000	\$19,000	\$4,000	<b>\$40,000</b>

- Exec Exhibit 3 below highlights the comprehensive impacts of operations (Exec Exhibit 1), investment (Exec Exhibit 2), plus visitor travel to/from Prince Rupert, visitor spending in Prince Rupert, and visitor spending in other regions of the province. The last three spending components are highlighted in Exhibit 7, Exhibit 5, and Exhibit 8 in the main report.

**Exec Exhibit 3: Aggregate Impacts of Multi-Day, Nature-Based Tourism, 2002**

	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>TOTAL</b>
<b>Tourist Expenditure</b>	\$24,545,000			
<b>Output</b>	\$22,598,000	\$8,168,000	\$2,455,000	<b>\$33,221,000</b>
<b>GDP (Value-Added)</b>	\$9,715,000	\$3,510,000	\$2,666,000	<b>\$15,891,000</b>
<b>Employment (FTEs)</b>	201.1	65.2	50.0	<b>316.3</b>
<b>Provincial Taxes and Levies</b>	\$860,000	\$377,000	\$219,000	<b>\$1,456,000</b>

# 1.0 INTRODUCTION

## 1.1 Overview

---

The North Coast Land and Resources Management Plan (LRMP) process began in 2002 with the intention to develop a land and resource management plan with which all stakeholders in the region would be in agreement. The Planning Table is comprised of 20 members representing various interest groups with connections to the land base, including stakeholders representing forestry, mining, First Nations, labour, tourism, and the like.

The initial work of the Table was centred on defining the significant issues (both those in contention and those where substantive agreement is already in place), on collecting relevant data, and in preparing GIS mappings of the land and resource base. With this set of information completed a report was commissioned to describe the current social and economic conditions in the region. In September 2002 a first draft of the *Base Case Socio-Economic Report*<sup>1</sup> was completed and submitted to participants for review and comment.

The report suggested that total revenues from commercial nature-based tourism in the Prince Rupert area in 2000 was valued at approximately \$6 million, and of that, fishing lodges and fishing charters account for roughly 70% of total revenues or \$4.2 million.<sup>2</sup> The North Coast Backcountry Caucus,<sup>3</sup> a group of nature-based tourism operators located on the north coast near Prince Rupert, expressed concern that the value of nature-based tourism was grossly underestimated, and that the Table may not recognize the importance of nature-based tourism to the North Coast economy using only data contained in the Base Case Socio-Economic. If the value of the nature-based tourism sector is under-appreciated, the significance of the land base to nature-based tourism also may go unrecognized.

The North Coast Backcountry Caucus, with the assistance of the Ministry of Sustainable Resource Management (MSRM) and Tourism BC, commissioned this study with the objective to provide an accurate and credible estimate of the impacts of multi-day nature-based (MDNB) tourism in the region. In order to identify these impacts precisely, the Caucus members agreed to provide detailed financial and clientele information on their operations. A more detailed description of the methodology for determining these impacts is presented in the next section.

---

<sup>1</sup> *Base Case Socio-Economic Report (Draft)*, prepared for the Ministry of Sustainable Resource Management; prepared by Robinson Consulting and Associates and Jackie Hamilton and Associates, September 2, 2002.

<sup>2</sup> *Base Case Socio-Economic Report (Draft)*, Op. cit. page 45.

<sup>3</sup> The North Coast Backcountry Caucus members who are included in this study are: King Pacific Lodge, Westcoast Resorts, Bluewater Adventures, Big Time Sports Fishing, Ocean Adventures, Ocean Light II, Sunchase, Maple Leaf Adventures, Duen Sailing, St. John's Lodge, North King Lodge, Dolphins Lodge and Wipf Soon Lodge.

## 1.2 Approach

---

Over the past 20 years, it has become increasingly apparent that “tourism” contributes a great deal to communities both in terms of direct economic growth and employment and in terms of indirect/spin-off activity. This has been particularly evident in the non-metro regions of British Columbia, as primary resource extraction (forestry, mining, commercial fishing, etc.) has contracted or, because of increased capital investment, has reduced its dependency on local labour. As a consequence, there has been significant effort made to understand the mechanism of how tourism activity affects an economy.

The closest published data relating to total tourism activity in the broad Prince Rupert area are from the Economic Dependency data generated by BC STATS for the year 1996.<sup>4</sup> Unfortunately, these data do not identify nature-based tourism and, far more important, there are some serious flaws in the methodology and underlying approach that makes using the data for estimating small, local area tourism impacts problematic. Consequently, for the purposes of the Planning Table and the Socio-Economic Base Case, the data produced by BC STATS are not really useful for determining tourist activity on the North Coast.

Given that the Economic Dependency data are not useful for the purposes needed, it was necessary to look to other approaches that have yielded useful results. In the published literature, two general approaches for determining tourism impacts have emerged: an analysis of the *demand* side and an analysis of the *supply* side.

Demand side analysis uses survey information gathered from departing visitors as to their spending within the country or province or locality. The results can be suspect since they rely on visitor recall (recall often under-estimates total spending) and are based only on a small sample of visitors. This information usually details how much in total is spent (i.e., how much tourism is “demanded”), the types of goods and services purchased (e.g., accommodation, food, entertainment, etc.), and the type of tourists making the purchases (e.g., by type of accommodation used or by the visitor’s country of residence). Tourism BC completed the last demand-side survey for British Columbia in 1996.<sup>5</sup> Besides being somewhat out-of-date at this time, the data are only available at the Tourism Region level (e.g., for the entire Northwest Tourism Region). Consequently, it is difficult to make use of that data to infer the value of tourism, especially nature-based tourism, to local economies such as Prince Rupert and its surroundings.

Supply-side analysis examines tourism activity not from the perspective of those *demanding* tourism goods and services, but from the perspective of firms *supplying* those goods and services. By surveying these entities to collect detailed financial characteristics, the sum of the revenues derived from tourists will yield an estimate of total tourist expenditures, similar

---

<sup>4</sup> *BC Local Area Economic Dependencies and Impact Ratios – 1996*, BC STATS, Ministry of Finance and Corporate Relations, Government of British Columbia, 1999. “Prince Rupert” is defined as the communities of Prince Rupert proper plus Digby Island, Port Edward and Port Simpson.

<sup>5</sup> Visitor 96 Study, commissioned by Tourism BC, 1997.

to that generated by the demand side approach. Indeed, the two approaches theoretically will yield identical spending patterns if all the information is complete and accurate.<sup>6</sup>

The question must be asked: if the two approaches result in essentially the same final estimate of tourism spending, why go through the trouble of doing a supply-side analysis if the demand data are already available? The answer has a number of explanations. First, supply-side surveys can collect information from a larger proportion of firms and with much greater accuracy than can demand-side analysis. Second, supply-side analysis provides much more information than just how much is spent by tourists. It provides a detailed account of the type of industries benefiting from tourism, how much these firms are spending in the local economies, how much labour they are employing, what taxes are collected and, ultimately, what the impacts are on the economy as a whole. Through supply-side analysis, it is possible to track these impacts by different types of tourists (e.g., those staying in high-end hotels versus those staying in motels, or European visitors versus American visitors, or stopover visitors versus cruise passengers). It is also possible to identify the impacts on the economy of purchasing different types of goods and services (e.g., the impacts of purchasing a hunting package versus taking a family vacation). And three, supply-side analysis can identify economic benefits for virtually any region or locale in the province, provided the data from the regional operations are available. As such, using supply-side analysis it is possible to determine accurately the value of nature-based tourism in the coastal area of the North Coast and the potential spin-offs to the province.

The approach taken in this study is fundamentally a supply-side analysis. The first step in the process was to collect financial information (detailed financial statements) from all the firms identified as providing a multi-day, nature-based tourism product in the coastal North Coast region.<sup>7</sup> This financial information was coded and put into a common financial format.<sup>8</sup> This produced an aggregate financial statement for nature-based tourism in coastal North Coast. It is these data that are displayed in Exhibit 1 on page 5.

Once the aggregate financial statement is estimated, the individual financial items are mapped into a National Accounting (Input-Output) format, the appropriate adjustments and re-allocation of margins made, and estimates generated of value-added (GDP), employment and provincial revenues. Then, using the BC Input-Output model, the secondary impacts on

---

<sup>6</sup> To equate the two sides, certain adjustments need to be made, since the income statements of companies exclude some tourist expenditures (e.g., gratuities, GST and PST payments, etc.). It should also be noted that other industries measured by Statistics Canada (e.g., Forestry, Mining) are estimated from the supply side. Thus, the approach adopted in this report is entirely consistent and comparable with the approach used for other industrial sectors.

<sup>7</sup> “Multi-day, nature-based (MDNB) tourism” includes operators whose product directly depends on natural amenities, that is, clients directly use the natural amenities such as the ocean, rivers, mountains, etc. and without access to these natural amenities, the product could not be sold. It includes *only* operators providing accommodation for at least one night. Single day, nature-based (SDNB) tourism is a separate sector.

<sup>8</sup> The common format is based on *A Uniform System of Accounts for Hotels*, 8<sup>th</sup>. Revised Edition, Hotel Association of New York City, 1986. The Uniform System contains roughly 500 separate line items corresponding to nine basic operating departments. Most larger tourism operations, hotels and other operations, use a version of this Uniform System in their accounting procedures.

the economy (indirect and induced impacts) were estimated. Appendix A provides a more detailed review of the differences between Economic and National Accounting and how the adjustments and re-allocations are handled.

## 2.0 RESULTS

The economic impacts derived from commercial multi-day, nature-based (MDNB) tourism in the Prince Rupert region stem from three sources.

- **Impacts due to MDNB tourism:** Impacts occur from operational activities and capital investment in structures and machinery and equipment. MDNB tourism in this report includes 7 fishing lodges providing guided angling and other wilderness-based activities, and 6 charter boat operators providing guided angling and wilderness-based activities.<sup>9</sup> Other water-based lodges and/or boat charters also operate in the area and, as well, there is at least one guide outfitting operation whose guide territory encompasses the coastal area near Prince Rupert. The results of this study include only the aforementioned thirteen (13) operators and therefore underestimate the total impacts of MDNB tourism to the region.
- **Impacts due to client travel to/from the MDNB facility:** Most clients must travel to and from the lodges and/or boat launch moorages, and this travel has net benefits to the local and provincial economies. Spending includes spending on airfares or on gasoline, and also on accommodation in Prince Rupert prior to and just after the nature-based experience, for restaurant food and/or groceries, and possibly for entertainment and shopping in Prince Rupert, etc.
- **Impacts due to client spending in other regions of the province.** Many fishing lodge/boat charter clients spend a number of days visiting Vancouver or spend time taking part in other activities in other locations of the province either prior to or just after their fishing trip. Under conventional standards, if the main reason for travelling to BC is to fish, then this additional activity can be attributable to tourism in the Prince Rupert area. Although it is not possible to identify accurately the value of this additional activity without a proper survey of clients, an attempt is made in a later section of this report to put a magnitude on the value.

The following sections estimate the economic value of these various components, with the understanding that for some estimation, a degree of imputation was required.

---

<sup>9</sup> See footnote 3 for a listing of these operators.



## 2.1 Commercial Multi-Day Nature-Based Tourism

Commercial MDNB tourism contributes to the local and provincial economies in two ways. First, its annual operations have clients spending tourist dollars that, in turn, generate domestic GDP, employment, and tax revenues. In addition, commercial tourist operations also invest capital in structures, marine vessels and machinery and equipment that, after removing imports, generates additional economic activity in the locality and the province. The impacts of these two components are discussed below separately.

### 2.1.1 Commercial Multi-Day, Nature-Based Tourist Operations

As was discussed earlier, detailed financial statements (income statements and balance sheets) from each of the operators were obtained and coded to a common format, displayed in Exhibit 1 below. If all businesses were collected into one business, the common format statement below is what the one large business would generate.

**Exhibit 1: Common Format Financial Statement**

<b>TOTAL INCOME</b>	<b>2002</b>
<b>SPORTS &amp; RECREATION</b>	<b>\$14,683,732</b>
<b>RETAIL TRADE</b>	<b>\$219,349</b>
<b>TELEPHONE AND LAUNDRY</b>	<b>\$35,788</b>
<b>OTHER OPERATING REVENUE</b>	<b>\$127,798</b>
<b>NON-OPERATING REVENUE</b>	<b>\$97,074</b>
<b>TOTAL REVENUE</b>	<b>\$15,163,741</b>
<b>TOTAL EXPENSES</b>	
<b>ROOMS EXPENSES</b>	<b>\$742,200</b>
<b>RESTAURANT &amp; BAR EXPENSES</b>	<b>\$1,565,983</b>
<i>Cost of Goods Sold</i>	<i>\$767,681</i>
<i>Expenses</i>	<i>\$798,302</i>
<b>SPORTS &amp; REC. EXPENSES</b>	<b>\$1,891,365</b>
<b>TRANSPORT RELATED EXPENSES</b>	<b>\$2,846,447</b>
<b>TELEPHONE &amp; LAUNDRY EXPENSES</b>	<b>\$74,910</b>
<b>OTHER OPERATING EXPENSES</b>	<b>\$61,630</b>
<b>ADMINISTRATION</b>	<b>\$1,270,219</b>
<b>MARKETING</b>	<b>\$937,890</b>
<b>PROPERTY OPER. &amp; MAINTENANCE</b>	<b>\$223,325</b>
<b>ENERGY COSTS</b>	<b>\$108,903</b>
<b>FIXED CHARGES</b>	<b>\$372,357</b>
<b>LICENSES AND TAXES</b>	<b>\$234,338</b>
<b>TOTAL OPERATING EXPENSES</b>	<b>\$10,440,140</b>
<b>TOTAL PAYROLL</b>	<b>\$3,060,359</b>
<b>NET INCOME (EBIDT)</b>	<b>\$1,663,242</b>

\* EBIDT = Earnings before interest payments, depreciation and direct taxes

Total revenues by commercial multi-day, nature-based tourism operators reached \$15,164,000 in 2002, of which \$15,067,000 were derived directly from tourist spending.<sup>10</sup> Total payment for material goods and services was \$10,440,000, while total payroll (wages, salaries and benefits excluding gratuities and imputed room and board) reached \$3,060,000. Overall, net income prior to interest, depreciation and taxes was \$1,663,000. This results in an EBIDT profit margin of 11.0%.

After mapping the financial statement items to National Accounting categories and making all of the necessary adjustments and margin re-allocations as described in Appendix A, the following aggregate Input-Output table was estimated. NOTE: although the values in Exhibit 2 are related to the values in Exhibit 1, there are a number of differences (see Appendix A for a comprehensive explanation of these differences).

**Exhibit 2: Input-Output Table for MDNB Tourism, 2002<sup>11</sup>**

<b>MAKE MATRIX</b>	
<b>2002</b>	
<b>Retail Trade</b>	<b>\$108,776</b>
<b>Nature-Based Tourism Activities</b>	<b>\$15,357,924</b>
<b>Other Services</b>	<b>\$219,684</b>
<b>TOTAL OUTPUT</b>	<b>\$15,686,385</b>
<b>USE MATRIX</b>	
<b>Primary Industries</b>	<b>\$51,165</b>
<b>Food &amp; Beverage Industries</b>	<b>\$718,719</b>
<b>Refined Petroleum Products Industries</b>	<b>\$434,355</b>
<b>Other Manufacturing Industries</b>	<b>\$2,106,588</b>
<b>Construction Industries</b>	<b>\$26,817</b>
<b>Trasportation and Storage Industries</b>	<b>\$3,197,796</b>
<b>Radio, TV, Telephone and Utilities</b>	<b>\$308,397</b>
<b>Banking and Insurance Industries</b>	<b>\$540,474</b>
<b>Advertising and Promotion</b>	<b>\$625,317</b>
<b>Other Services</b>	<b>\$2,071,623</b>
<b>TOTAL MATERIAL INPUTS</b>	<b>\$10,081,251</b>
<b>TOTAL DIRECT GDP</b>	<b>\$5,605,134</b>
<b>WAGES AND SALARIES</b>	<b>\$3,535,215</b>
<b>SUPPLEMENTARY LABOUR INCOME</b>	<b>\$255,435</b>
<b>COMMODITY AND INDIRECT TAXES</b>	<b>\$229,353</b>
<b>OPERATING SURPLUS</b>	<b>\$1,585,137</b>
<b>GDP-TO-OUTPUT RATIO</b>	<b>0.36</b>

Total Output of the multi-day nature-based tourism sector on the North Coast is estimated to be \$15.69 million in 2002, the vast majority of this stemming from the provision of nature-

<sup>10</sup> The difference between total revenues and revenues directly from tourists includes such incomes as interest income, income from property rental, and the like.

<sup>11</sup> The Input-Output tables, MAKE and USE, are comprised of 243 separate industries. However, for the sake of presentation, the table has been compressed to illustrate only aggregate values.

based activities. The total amount of goods and services, excluding wages, purchased by these nature-based operations (a good proportion of this purchasing is from Prince Rupert) totalled \$10.08 million. The resulting GDP from this output is estimated at \$5.61 million, of which \$3.79 million is for wages, salaries and benefits (including gratuities and imputed room and board). The estimated GDP-to-Output ratio is 0.36 indicating that for every dollar spent by nature-based tourists on the North Coast, 36 cents is a direct contribution to the provincial economy.

Once the USE matrix components are estimated, these can be entered into the BC Input-Output model (BCIOM) in order to calculate indirect and induced impacts, that is, the impacts on other sectors of the economy.<sup>12</sup>

Exhibit 3 displays the estimates of direct, indirect and induced economic activity attributable to MDNB tourism in the Prince Rupert area. Recall that the results are conservative in that not all commercial operators could be identified and their impacts included. Nevertheless, all large users and a good cross-section of smaller users are represented.

**Exhibit 3: Economic Impacts of Multi-Day, Nature-Based Tourism, 2002**

	Direct	Indirect	Induced	TOTAL
<b>Tourist Expenditure</b>	\$17,020,000			
<b>Commercial Tourism Output</b>	\$15,686,000	\$4,056,000	\$1,005,000	<b>\$20,747,000</b>
<b>GDP (Value-Added)</b>	\$5,605,000	\$1,759,000	\$1,848,000	<b>\$9,212,000</b>
<b>Employment (FTEs)</b>	83.0	31.2	29.0	<b>143.2</b>
<b>Provincial Taxes and Levies</b>	\$553,000	\$202,000	\$83,000	<b>\$838,000</b>

**Note:** Due to promises of confidentiality, the results cannot be broken out by type of activity or by wilderness product, although the data were provided at that level.

As previously stated, total tourist spending (including all appropriate federal and provincial taxes) related to multi-day, nature-based tourism is estimated at \$17.02 million while Output is estimated at \$15.69 million.<sup>13</sup> This generates direct GDP (or value-added) of \$5.61 million or a direct GDP-to-Output ratio of 0.36.<sup>14</sup>

Total direct employment on a Full-Time Equivalent (FTE) basis amounts to an estimated 83.0 jobs. Since most jobs are seasonal, the number of individuals deriving income directly from the tourist sector is substantially greater. Estimates from the companies suggest that the

<sup>12</sup> “Indirect” refers to the economic activity generated by industries supplying goods and services to tourist businesses. “Induced” refers to the added economic activity stemming from increased wages that are, after the removal of personal taxes and savings, re-spent in the economy. See Appendix A for complete definitions and examples of indirect and induced impacts.

<sup>13</sup> Recall that tourist spending is not equal to Output since spending includes taxes paid by tourists (GST and applicable PST). Tourism Output itself is different from revenues recorded by tourism operators since Output includes gratuities paid to employees and imputed room and board, but excludes the cost portion of retail sales (see Appendix A for a detailed explanation of these differences).

<sup>14</sup> The value 0.36 is relatively low compared to most tourism sectors in the province because of the relative high level of transportation costs associated with the high-end types of operations found on the North Coast. While this reduces direct GDP (and direct Employment), indirect GDP (and Employment) will be relatively higher.

headcount employment likely exceeds 181 people. When accounting for indirect and induced employment, the total number of FTE jobs generated by multi-day, nature-based tourism is estimated at 143.2.

The level of wages and salaries (including gratuities and imputed room and board but excluding benefits and payroll taxes such as CPP, EI and WCB) earned by employees of commercial nature-based tourism on the North Coast is estimated at \$3.54 million. This suggests that the average annual wage in the multi-day, nature-based tourism sector is roughly \$42,600 on an FTE basis. That is, if the employees were working full-time for all of the year, their average salary would be \$42,600, including gratuities. Of course, almost all the positions are seasonal and therefore the actual pay per employee is substantively less at \$19,500, including gratuities.

An important consideration regarding the value of multi-day, nature-based tourism is the level of provincial taxation attributable to commercial tourism operators. Provincial taxation is defined in this report to include taxes paid by visitors (Hotel Tax, PST on liquor sales, PST on retail sales, etc.), provincial taxes embedded in the price of goods purchased by the operators, taxes, licenses, land leases and levies paid directly by the tourism operators to the provincial government, and provincial personal income taxes. Total taxes directly attributable to commercial tourism are estimated at \$553,000 excluding provincial corporate taxes paid on corporate net income. Including the tax revenues stemming from the additional indirect and induced economic activity generated by tourism results in a total revenue of \$838,000 accruing to the provincial government from activity on coastal Prince Rupert.<sup>15</sup>

An important characteristic of multi-day, nature-based tourism activity based in the Prince Rupert area is the relatively high average daily spending by visitors and the fact that the majority of visitors are from outside British Columbia.

According to the Visitor Study of 1996, average daily spending by all overnight visitors in the province was roughly \$77 with non-resident visitors spending approximately \$83 per day. Accounting for some inflation suggests that average daily spending in the year 2002 may have been in the \$90 - \$95 range. The number of multi-day, nature-based tourism client days in the coastal Prince Rupert area is estimated at 4,095.<sup>16</sup> Based on total tourism spending of \$17.02 million, this translates to average per diem spending of \$915, almost nine times the average daily tourist expenditures in the province as a whole.

According to the Visitor 96 Study, of total overnight visitors to the province in 1996, just less than one half were from outside British Columbia. Multi-day, nature-based tourism clients in the coastal Prince Rupert area, on the other hand, were predominately non-British Columbians (over 90%), the majority of those being from the US or overseas. As a

---

<sup>15</sup> In addition to the taxes identified here, there is also the question of investment activity by tourism operators and the spin-off taxes resulting from that spending. Those impacts are calculated in the next section.

<sup>16</sup> Detailed data on the number of visitors, the number of visitor days, and the origin of clients were collected directly from operators.

consequence, nature-based tourism on the North Coast can be considered an almost pure export, no different from the export of lumber or coal.

### 2.1.2 Capital Investment Activities

In order to maintain, enhance and expand operations, most companies need to update their capital assets on an on-going basis. In 2002, the combined level of capital investment undertaken by our group of multi-day, nature-based tourism operators is estimated at \$397,000, of which \$94,000 was for machinery and equipment (including vehicles and boats and boat capital supplies) and \$303,000 for building refurbishment and for furniture and fixture purchases.

The purchase of these investment goods also has spin-off impacts on the economy. Generally, however, because so much of machinery is imported into British Columbia, the spin-off impacts are relatively low. Exhibit 4 highlights the direct, indirect and induced impacts on the province of British Columbia from this capital investment.

**Exhibit 4: Economic Impacts of Capital Investment Activities, 2002**

	Direct	Indirect	Induced	TOTAL
Investment Expenditure	\$397,000			
Investment Output	\$380,000	\$161,000	\$55,000	<b>\$596,000</b>
GDP (Value-Added)	\$315,000	\$73,000	\$31,000	<b>\$419,000</b>
Employment (FTEs)	3.0	1.3	1.2	<b>5.5</b>
Provincial Taxes and Levies	\$17,000	\$19,000	\$4,000	<b>\$40,000</b>

## 2.2 Client Travel to/from MDNB Facilities

Most clients must travel from (usually) Vancouver to Prince Rupert where they (usually) stay a day or so before heading to their fishing lodge/boat charter.<sup>17</sup> After their nature-based holiday, they then (usually) travel back to Prince Rupert, perhaps stay another day or so, and then travel back to Vancouver. These two spending categories, travel to/from Prince Rupert and the cost of staying in Prince Rupert, are discussed below.

### 2.2.1 Economic Impacts of Travel to/from Prince Rupert

From discussions with the operators, of the 4,095 total clients, approximately 800 to 1000 clients are flown directly by the operator from Vancouver to the fishing/boat facility. Accordingly, we can conservatively assume that a client base of 3,095, flew to/from Prince Rupert from Vancouver. With the average flight cost from Vancouver to Prince Rupert estimated at \$550, this would represent a total expenditure of \$1,702,000. After removing all the appropriate taxes, the contribution to provincial GDP is estimated at \$584,000. Exhibit 5 below describes all the additional impacts associated with travel to and from Prince Rupert.

<sup>17</sup> The operator usually covers the cost of travel from Prince Rupert to the MDNB facility and therefore these costs are included in the financial statements highlighted in Exhibit 1. Notice the relatively large expense item "Transport Related Expenses".

### Exhibit 5: Economic Impacts of Clients Flying to/from Prince Rupert, 2002

	Direct	Indirect	Induced	TOTAL
Tourist Expenditure	\$1,702,000			
Output	\$1,486,000	\$1,031,000	\$254,000	\$2,771,000
GDP (Value-Added)	\$584,000	\$431,000	\$149,000	\$1,164,000
Employment (FTEs)	10.6	8.3	8.3	27.1
Provincial Taxes and Levies	\$83,000	\$45,000	\$30,000	\$158,000

#### 2.2.2 The Economic Impacts of Client Spending in Prince Rupert

While it is known that the majority of clients spend at least one night in Prince Rupert prior to travelling to the fishing lodge or boarding their charter boat and many spend additional nights after their trip, no survey of clients has been undertaken to determine the value of this spending in the city of Prince Rupert on such items as accommodation, food and beverages, entertainment and the like. For the purposes of this report, then, it was necessary to use other, related information to assess these impacts.

In the autumn of 2002, Pacific Analytics undertook a detailed survey of clients of three high-end steelhead fishing lodges located in the Babine River Corridor Park near Smithers, BC. The purpose of this survey was to determine the spending by clients in Smithers prior to and just after their fishing trips and, as well, spending in other regions of the province, including Vancouver, during their vacation to BC. The questionnaire was provided to 379 clients and had a response rate of 70% (265 responses).<sup>18</sup>

The regional breakdown of Babine clients was estimated at just over 80% coming from the US, 9% from overseas, and the remaining 11% from BC and the rest of Canada. This is roughly equivalent to client origins of the North Coast operators. The average cost of the Babine fishing experienced was approximately \$850 per day, comparable to the average daily cost of \$915 charged by multi-day nature-based operators on the North Coast. As such, we propose to use the Babine study results to approximate the spending patterns of clients of the North Coast operations, with the understanding that actual spending patterns may differ. The following summarizes the Babine findings.

The general pattern of fishing clients travelling to the Babine to fish is to fly/drive into Smithers, spend one or more nights at a local hotel, and then travel to their appointed lodge on the Babine. Overall, 91% of clients stayed in Smithers at least one night, with 19.5% staying more than one night. According to the survey results, the average number of nights spent in Smithers per client was 1.3 prior to and just after traveling to the Babine while the average spending reached \$368 per person. Another 9% of clients did not overnight in Smithers, but still purchased goods and services in Smithers before embarking from the fishing lodge. Of the total \$215,600 spent in Smithers by all clients, \$49,300 was spent on

<sup>18</sup> *The Economic Value Of Additional Spending By Fishing Clients Of The Babine River Corridor Park*, prepared by Pacific Analytics Inc. for the Babine River Foundation, January 2003. The response rate of the survey was 70%.

accommodation (\$100 per person per day), \$26,500 on food and beverage (\$54 per person per day), \$102,600 on shopping (\$208 per person per day), and another \$37,200 (\$75 per person per day) on miscellaneous items, including taxis, rental cars, departure tax, and the like. Exhibit 6 displays the spending patterns for clients in Smithers.

**Exhibit 6: Babine Client Spending in Smithers**

<b>Total Clients</b>	<b>Total Nights</b>	<b>Rooms</b>	<b>Food</b>	<b>Shopping*</b>	<b>Misc.</b>	<b>Total Spend in Smithers</b>
379	493	\$49,300	\$26,500	\$102,600	\$37,200	<b>\$215,600</b>

\* Shopping includes purchases of alcohol from Liquor Store

Our analysis estimates that multi-day nature-based tourism operations in the North Coast serviced 4,095 clients in 2002. However, it is estimated that approximately 800 to 1,000 clients flew in directly from Vancouver to the fishing lodge/boat charter operations. As such, we estimate that 3,095 clients went through Prince Rupert. Using the same spending patterns as displayed in Exhibit 6, this translates into an estimated spending in Prince Rupert by clients of the nature-based operations of \$1,756,000.

Exhibit 7 below highlights the total provincial economic impacts of this client spending in terms of GDP, employment and provincial taxes.<sup>19</sup> Using direct spending in Prince Rupert of \$1,756,000, direct GDP increases by \$930,000 and total GDP increases by \$1,456,000. Direct employment on a Full-Time Equivalent basis increases by 32.7, while total employment in the province increases by 42.5. The province receives an estimated \$78,000 in direct taxes from this Prince Rupert spending and when the indirect and induced impacts are included, the total provincial take increases to \$162,000.

**Exhibit 7: Economic Impacts of Client Spending in Prince Rupert, 2002**

	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>TOTAL</b>
<b>Tourist Expenditure</b>	\$1,756,000			
<b>Commercial Tourism Output</b>	\$1,637,000	\$802,000	\$334,000	<b>\$2,773,000</b>
<b>GDP (Value-Added)</b>	\$930,000	\$339,000	\$187,000	<b>\$1,456,000</b>
<b>Employment (FTEs)</b>	32.7	6.5	3.3	<b>42.5</b>
<b>Provincial Taxes and Levies</b>	\$78,000	\$42,000	\$42,000	<b>\$162,000</b>

**2.3 Economic Impacts Additional Spending in Other Regions of BC**

As stated in the beginning of this section, there are three sources of economic impacts from MDNB tourism on the North Coast. The first source was from the operations themselves, and these impacts were measured in sub-section 2.1. The second source was from client

<sup>19</sup> As indicated earlier, it is difficult to determine with any accuracy the economic impacts of this spending on Prince Rupert itself. Nevertheless, an attempt is made in Section 2.5 to identify the approximate impacts on Prince Rupert.

travel to/from Prince Rupert, measured in sub-section 2.2. In this sub-section we measure the third source on economic impacts on the economy: spending by fishing clients in other regions of the province.

The Babine study referred to in Section 2.2.2 also estimated the additional spending that fishing clients made elsewhere in the province during their vacation. The study estimated that this spending was approximately \$1,150 per client, excluding flights into Vancouver from outside the province, travel to Smithers, and spending in Smithers itself. Assuming that these spending characteristics of high-end fishing clientele represent a reasonable proxy for North Coast fishing clients, then the clients of the multi-day, nature-based tourism operations generated an additional \$3,670,000 of spending in the province. Exhibit 8 highlights the economic impacts on the province that this additional spending generates.

**Exhibit 8: Economic Impacts of Additional Spending in Other Regions of BC, 2002**

	Direct	Indirect	Induced	TOTAL
<b>Tourist Expenditure</b>	\$3,670,000			
<b>Commercial Tourism Output</b>	\$3,409,000	\$2,118,000	\$807,000	<b>\$6,334,000</b>
<b>GDP (Value-Added)</b>	\$2,281,000	\$908,000	\$451,000	<b>\$3,640,000</b>
<b>Employment (FTEs)</b>	71.9	18.0	8.2	<b>98.0</b>
<b>Provincial Taxes and Levies</b>	\$129,000	\$69,000	\$60,000	<b>\$258,000</b>

## **2.4 Aggregate Economic Impacts of MDNB Tourism on the North Coast**

From the three major sources of economic impacts described and measured in sub-sections 2.1, 2.2 and 2.3, it is now possible to identify the aggregate impacts of MDNB tourism on the North Coast as measured by these three sources. Exhibit 9 highlights these total impacts.

**Exhibit 9: Aggregate Impacts of MDNB Tourism, 2002**

	Direct	Indirect	Induced	TOTAL
<b>Tourist Expenditure</b>	\$24,545,000			
<b>Output</b>	\$22,598,000	\$8,168,000	\$2,455,000	<b>\$33,221,000</b>
<b>GDP (Value-Added)</b>	\$9,715,000	\$3,510,000	\$2,666,000	<b>\$15,891,000</b>
<b>Employment (FTEs)</b>	201.1	65.2	50.0	<b>316.3</b>
<b>Provincial Taxes and Levies</b>	\$860,000	\$377,000	\$219,000	<b>\$1,456,000</b>

In total, clients of north coast fishing lodges and boat charters spent a total of \$24.55 million (\$22.60 million excluding taxes) while vacationing in BC. This resulted in a contribution to direct provincial GDP of \$9.72 million, the creation of 201 direct jobs, and the contribution of \$860,000 to provincial coffers. When indirect and induced impacts are included, provincial GDP increases by \$15.89 million and the total jobs created is over 316. Tax revenues going to the provincial government are estimated at approximately \$1.46 million.



## **2.5 Direct Wage Impacts on the City of Prince Rupert**

---

Prince Rupert benefits from MDNB tourism on the North Coast in several ways. First, as discussed in sub-section 2.2.2, clients spend tourist dollars in Prince Rupert prior to and just after their fishing holiday and this generates added wages in the city to be respent. Two, a proportion of employees hired by the fishing lodges and boat charters reside in Prince Rupert in the off-season, and the wages they earned are partially respent in the Prince Rupert economy. And three, a portion of the purchases (expenses) of fishing lodges and boat charters are made in Prince Rupert and this results in an increase in wages in the city. These three benefits are discussed below.

### **2.5.1 Direct Wage Impacts of Client Spending on Prince Rupert**

As described in sub-section 2.2.2, client spending in Prince Rupert amounted to \$1.76 million on such items as accommodation, restaurant food, entertainment, and the like. This resulted in a direct GDP contribution of \$930,000. Generally, wages account for approximately 70 percent of tourism GDP, and consequently client spending is added some \$650,000 to Prince Rupert wages in 2002.

### **2.5.2 Employee Wage Impacts on Prince Rupert**

According to information from the operators, approximately 20 percent of employees reside in and around the Prince Rupert area. As displayed in Exhibit 2, the total wages and salaries excluding supplementary labour income (that is, excluding payroll taxes such as CPP, EI and WCB costs) but including gratuities was \$3.54 million in 2002. Taking 20 percent of this results in a total of \$710,000 in wages accruing to employees residing in the Prince Rupert area.

### **2.5.3 The Direct Wage Impacts of Operation Purchases on Prince Rupert**

Determining the economic impacts of operations and their purchases on the local economy of Prince Rupert is a difficult exercise. The reasons for this are three-fold. First, many operators were not able to identify precisely what products and services were purchased in Prince Rupert as opposed to being purchased from the Lower Mainland or other areas. Second, even if we could identify accurately the *value* of purchases in Prince Rupert, it is difficult to determine the *impacts* of these purchases. This is because most goods are not manufactured in Prince Rupert, but rather are brought in from Vancouver or other cities, including cities located outside BC. The consequence of this is that, at least for the purchases of goods, *only the retail margin* (the mark-up charged by local providers) is considered an impact on Prince Rupert. Finally, the BC Input-Output model is designed to estimate the economic impacts of spending on the provincial economy and as such, it is not possible to use it to determine the indirect and induced impacts on Prince Rupert itself.

Although we have said it is a difficult process to determine accurately the impacts on Prince Rupert, we believe it is possible to provide an indication of the potential impacts, emphasizing that the estimates provide below are at best reasonable magnitudes.

Total purchases (excluding labour payments) by all operators are estimated at \$10.4 million (see Exhibit 1). However, many of these purchases are for goods and services that would likely be purchased elsewhere other than Prince Rupert, particularly since the home base of most of the operators is in the Lower Mainland or on Vancouver Island. Examples of such purchases would be Insurance, Banking Services, Marketing Services, and the like. In addition, there are purchases that are clearly made outside the Prince Rupert area: Credit Card Commissions, Travel Agent Commissions, Telephone Costs, etc. Eliminating all purchases that are likely sourced outside of Prince Rupert leaves an estimated \$4.1 million in purchases that were likely made in the Prince Rupert region. More than three-quarters of these purchases were for goods, or roughly \$3.3 million. Since almost all of these goods would have been “imported” from outside Prince Rupert (that is, they were manufactured outside the region), the net impact on the city would only be the retail margins, which usually run at around 30% of purchase cost. This would translate into a net benefit to the city of Prince Rupert of some \$1.0 million. Adding to that the purchases of services of perhaps \$1.0 million, the net benefits accruing to Prince Rupert is estimated to be in the neighbourhood of \$2.0 million. Given that wages represent approximately 40% of output for both retail/wholesale businesses and most services, it is reasonable to say that multi-day nature-based tourism operations on the North Coast add approximately \$800,000 of wages and salaries to the Prince Rupert economy through their purchases. Again, the reader is cautioned that these are rough estimates at best.

#### **2.5.4 Total Direct Wage Impacts on Prince Rupert**

In total then, the direct wages and salaries (excluding benefits) contributed to the Prince Rupert economy from multi-day, nature-based tourism on the North Coast amounted to approximately \$2.5 million in 2002. While we have cautioned the reader that the derivation of these impacts is somewhat rough, it is clear that the contribution is significant and that MDNB tourism is an important sector for the Prince Rupert economy.

### **3.0 CONCLUSION**

The *Base Case Socio-Economic Report* submitted to the North Coast Land and Resource Management Planning Table suggested that the total value of nature-based tourism in the Plan Area was approximately \$6 million and that fishing lodges and boat charters contributed \$4.2 million. This study has examined just one component of nature-based tourism: 13 operators who offer overnight accommodation with their nature-based tourism product. Nature-based operators offering day experiences such as day kayaking, day boat tours or whale watching, etc. are not included in this study. Nor are a number of multi-day nature-based operators on the North Coast for whom financial information could not be assembled.

Despite the limited number of operators surveyed for this report (albeit all of the largest operators are included), the results strongly confirm that the value of the nature-based tourism sector on the North Coast is significantly larger than previously thought. Indeed, this

study has found that the 13 surveyed operators contributed almost three times to the economy (\$17.02 million) what was previously believed was the entire value of the nature-based tourism sector. As well, this study has identified additional spending related to multi-day, nature-based tourism on the North Coast that suggests that total spending in the province by clients of the 13 facilities amounted to \$24.55 million. When indirect and induced impacts are included, the total spending related to these visitors reached well over \$35 million (\$33.22 million before taxes).

These findings suggest that the importance of nature-based tourism on the North Coast should not be undervalued, particularly with regards to the extent the land base in the North Coast contributes to this dynamic sector.

## APPENDIX A: An Input-Output Primer

National Accounting (also termed Economic Accounting) assumes a company undertakes two steps in its production process. First, it purchases material inputs from other industries; and second, it transforms those material inputs into finished goods (or services), ready for resale. Take as an example a Restaurant. Restaurants buy fresh vegetables, meat, etc. from the Agriculture sector. Using other material inputs (e.g., electricity, cooking oil, etc.), it transforms them into finished dishes, which, in turn, are sold at a selling price higher than the cost of its inputs. The difference between the selling price and the material input cost is the “mark-up” or “value-added”. This value-added is used to pay for the kitchen and wait personnel, any taxes levied by governments, the depreciation of equipment, any interest costs the restaurant may have, and will also generate, the owner hopes, a profit.

National Accounting asserts that the value which the restaurant sector adds to the economy (hence, the term “value added”) is equal **not** to the total revenues of Restaurants, but only to this “mark-up” value. That is, the value of an industry to an economy is the difference between the value of its output (effectively, total revenues) and the cost of its material inputs. In this way, the Restaurant industry does not claim the value of the agriculture inputs it uses, which should rightly be accounted for by the Agriculture industry. As a result, there is no double counting when measuring the value of the entire economy.

In other words: the value-added of the tourism industry is the revenue from all of its sales to tourists (output) minus all of its costs for payments to other firms for goods or services (material inputs), or:

$$\text{Value Added} = \text{Output (or Final Sales)} - \text{Material Inputs}$$

Another way of defining value added is that it is the sum of an industry’s payments to employees, for indirect taxes, depreciation and interest costs, and for profit:

$$\text{Value Added} = \text{Labour} + \text{Indirect taxes} + \text{Depreciation} + \text{Interest Costs} + \text{Profit}$$

The resulting value-added of any firm (or industry) is available to be shared among labour (wages, salaries and benefits), indirect taxes and “operating surplus.” The operating surplus itself is shared between payments for the use of physical capital (depreciation), payments for the use of monetary capital (interest costs), and payments (profits) to the owner(s) of the enterprise. Value-added is an industry’s contribution to, or *direct impact* on, the economy. And the sum of value-added of all industries is termed the country’s Gross Domestic Product (GDP).

An important distinction needs to be made between Financial Accounting and National Accounting. Under financial accounting, an industry which has a high value added (i.e., contributes a lot to the economy), can be unprofitable if, for example, its payments to labour or in interest costs are too high. Alternatively, low value-adding industries can be very profitable to their owners, depending on their usage of labour and their capital structure.

Economists have standardized the measure of these flows and the inter-relationships of inputs and outputs among industries through the concept of Input-Output (I/O) analysis. The **MAKE** matrix (the top section of Exhibit 2 on page 6) identifies the various types of output the sector produces. The **USE** matrix (the bottom section of that same table) highlights all of the various types of inputs used to produce that output.<sup>20</sup> One can readily determine from these tables that subtracting total Material Inputs from total Output leaves Gross Domestic Product (GDP). This GDP is equal to the sum of Indirect and Commodity Taxes, Wages and Salaries, Benefits, and Operating Surplus.

The GDP-to-Output ratio is a measure of the direct contribution to the economy *per dollar of output*. Clearly, an industry that requires a lower dollar value of inputs to produce a given dollar of output is a higher value-adding industry. One must note, however, that a higher GDP-to-Output ratio does *not* imply that the industry is more important to the economy. It merely states that for every dollar of output the impact on the economy is greater. Obviously, when examining an industry's importance to an economy one must also take into account the total output of the industry. There is, however, another important characteristic of an industry that must be examined if one is to determine the importance of a sector to the local economy: its *linkages* to other industries.

When inputs such as fresh produce or meat are purchased by the Restaurant sector, the industries supplying those goods and services (in this case farmers, food manufacturers, and food wholesalers and retailers) increase their own economic activity. This increased activity itself creates demand for other products. Farmers, for example, may need more fertilizers for their land and more petrol to run their machinery. Food wholesalers may require additional box material. The demand for extra fertilizers and petrol and box material will, in turn, stimulate activity in the fertilizer, petrol and box industries. The increased activity in the fertilizer industry will create greater demand for its own inputs, perhaps some chemicals. And so it continues down the chain of industries. The sum effects of all this additional economic activity are known as *indirect impacts*.

---

<sup>20</sup> Output is closely associated with industry revenues and tourist spending, but there are important differences. Likewise, the inputs used by the tourism industry are highly related to industry expenses. But, again, the differences are important. For a summary of these differences, see the next sub-section: *Technical Differences*.

Such indirect impacts (also known as “multiplier effects” or “spin-offs”) on the economy clearly are important. They should not be ignored (as they usually are with financial accounting) if we are to measure the true benefits of an industry to an economy. An interesting observation is that, while it is true that high value-adding industries have low indirect impacts, those industries with relatively lower direct impacts have relatively higher indirect impacts. This is because, by definition, low value-adding industries consume more inputs per dollar of output and thus have a greater impact on their supplying industries. It should be noted, however, that the level of indirect impacts is highly influenced by the type of goods and services demanded and by the propensity of the companies to import those particular goods and services. The higher the propensity to import the required goods and services, the lower will be the effects on the local economy. Indeed, an industry that imports all its inputs will have virtually no indirect impact on the economy, save the small level of distributive activity (wholesale, retail and transportation margins) the imports may generate.

Increased industrial activity has a third effect on the economy. When additional wages and salaries are paid out, those dollars (appropriately adjusted for taxes and savings) are available to be re-spent on consumer goods and services. Take, for example, an additional \$1 million in wages resulting in say, an increase of disposable income of \$750,000. Depending on the spending patterns, this may result in extra consumer spending of say, \$500,000 in the retail sector (the remaining being spent in the entertainment sector, restaurant sector, etc.). This will increase the economic activity of the manufacturers and other suppliers of consumer goods who, in turn, will increase their own employment and their own wage payments. The sum effects of this additional activity due to increased wages are known as *induced impacts*. Again, it should be clear that, like indirect impacts, induced impacts are highly influenced by the economy’s propensity to import, as well as by taxation and savings rates, the level of wages paid to employees and the level of capacity at which the economy is operating.

The question arises: given that there are many levels of indirect and induced spending which affect many, many different firms and industrial sectors, how can we estimate these impacts on the economy. Fortunately, economists have developed a method to estimate these impacts, by using the same input-output tables to which we already have been introduced.<sup>21</sup> However, since the base information is coming from financial statement data directly from operations, it is critical to understand how financial statement data are re-structured to meet National Accounting standards. These differences are discussed below.

---

<sup>21</sup> For a detailed discussion of the underlying mathematics of Input-Output analysis, see Input-Output Analysis: Foundations and Extension, Ronald E. Miller and Peter D. Blair, Prentice Hall, 1985

## **Technical Differences**

Although the National Accounting (Input-Output) measurement of the value and impacts of tourism begins with the same set of data as the financial results of the industry or sector, a number of adjustments are required in order to conform to strict National Accounting standards. To avoid possible confusion, these technical differences between Financial Accounting and National Accounting should be understood. The intent here is not to provide a comprehensive or definitive discussion of these differences, however, but rather to provide a cursory overview. For a more in-depth discussion of the differences and of the methodology underlying National Accounting, the interested reader is referred to the National Accounting compendium published by the UN.<sup>22</sup>

The following outlines the major differences:

1. The first and perhaps most important difference is that National Accounting measures all non-tax related revenues and expenses related to production, even those not itemized on the corporate income statement. Hence, gratuities paid to staff are included as output (in the case of nature-based tourism, as an increase in sports revenues). This increases output but not material inputs, and therefore it increases the estimate of GDP (Output – Inputs) by precisely the amount of gratuities. Using our other definition of GDP (GDP = indirect taxes + wages, salaries and benefits + operating surplus), we see that the increase in GDP is reflected in an increase in wages and salaries equal to the reported gratuities.

Another (usually) off-budget item is an estimate of the value of imputed room and board. Since the provision of room and board is a value to the employee, it is considered equivalent to a wage subsidy, and thus contributes to overall GDP. Normally, the cost of food is already accounted for within the financial statement, thus the net impact on GDP is equal to the value of the imputed room and board. Statistics Canada has standard values that it uses to assess the value of this room and board.

2. At the same time, National Accounting omits revenues not directly related to the production process. Generally, these incomes are limited to interest and dividend earnings, but include non-operating revenues related to rental incomes, commissions and the like.
3. A third difference is that, under National Accounting, the value of each input in the USE matrix is stated in “producer” prices. That is, all wholesale, retail, and transportation costs included in the “purchaser” price of a commodity are removed, as are all commodity taxes and import duties. These “distributive and tax margins,” as they are called, are explicitly recognized in the USE matrix as separate line items. The reader should understand that this does not in any way reduce the total cost of inputs to the industry; it simply re-assigns the costs to different input categories.

---

<sup>22</sup> System of National Accounts, Statistical Papers Series F No 2 Rev. 4, New York, 1993

4. A fourth difference lies in the treatment of merchandise sales. National Accounting treats the purchase of merchandise as partly a purchase from the manufacturer of the good (equal to the cost price of the good less distributive and tax margins) and partly a purchase from the retailer (equal to the mark-up for the good). Consequently, in an input-output table for a sector selling some retail goods, there is no recognition of the cost of the merchandise on the input (USE) side, and only the mark-up value is recognized on the output (MAKE) side. The cost of the merchandise is captured in the Manufacturing sector as output. It is for this reason that some analysts recognize certain manufacturing industries as **direct** tourism, even though tourists do not actually buy any goods directly from those manufacturers.
5. Related to this unusual approach to merchandise sales is the treatment of “service margins.” When a firm purchases a product (such as liquor, beer or wine) and re-sells it with a mark-up without any fundamental change to it, National Accounting recognizes only the mark-up or “service margin” as output. It then treats the purchase cost of the product (less distributive and tax margins) as an output to the original producer of the good. The main instance that affects the tourism industry (besides retail sales) is alcohol sales. In this case, only the service margins are recognized as output, and the costs are assigned to the alcohol manufacturing sectors (beer, wine and liquor/distillers). In effect, then, the alcohol manufacturing sector is a direct provider to tourists under National Accounting principles.

The following simplified diagram may help explain some of these differences. On the left hand side is a financial statement containing revenues for rooms, food and beverage, rental income, merchandise sales, and interest and dividend payments. Room and Food & Beverage revenues are mapped directly into the Accommodation and Restaurant categories, but with the addition of (say, 10%) gratuities. Rental Income is part of the production process and therefore is entered on the National Accounting side. Merchandise under National Accounting is the net value. Interest and Dividends are not part of production, and they are excluded from the right hand side. Operating Expenses are mapped and broken down according to their constituent parts: the cost at the factory gate, the distributive (wholesale, retail and transportation) costs, and the various taxes and duties. Wages go directly into the Wages and Salaries component, but include the gratuities.



