

**Assessing tourism yield:  
an analysis of public sector costs and benefits**

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**ABSTRACT**

Yield has become a central issue in tourism development. Throughout the world many tourism managers speak of “high yield, low volume” tourism. In New Zealand, for example, the national Tourism Strategy (NZTS2010) has called for improved yield management and sustainable development as its two key goals. In response to these goals Lincoln University and Landcare Research Ltd in partnership with the Tourism Association of New Zealand, have recently been funded by New Zealand’s Ministry of Tourism, to undertake an extensive programme of research to investigate the nature of tourism yield.

To ensure sustainable tourism development it is argued necessary to determine financial (business), economic (transactionally evident), and sustainable yield. Under such a framework it is necessary to consider private sector, public sector and society's costs and benefits arising from tourism production and consumption.

This paper reports on an analysis of the public sector's contributions. It reviews definitional and methodological challenges before reporting on a national level, two regional, and two local authority case studies. In parallel with the private sector, government agencies' involvement in tourism is both broad (virtually all government departments have some involvement with tourism) and varies at different geographical scales. Tourism also attracts a spectrum of economic and social /developmental perspectives which lead to differing policy perspectives. All of these serve to confound an easy analysis.

The definitions and analyses presented in this paper have arisen from a joint sector - researcher framework. This 'work in progress' is put forward as a basis for discussion and debate. Data from this project will be carried forward into the programme's broader consideration of regional yield and yield per tourist type. They will also inform tools for public sector investment in tourism.

**Keywords** : yield, public sector, sustainable tourism.

## **INTRODUCTION**

Sustainable development is at the core of the the New Zealand Tourism Strategy 2010 (TSG, 2001) strategy which seeks to: "Grow tourism demand and financial returns while enhancing the quality of the visitor experience and New Zealander's quality of life" (p ii). Among its 43 recommendations are a search for "... initiatives to research, develop and promote the use of pricing and yield management strategies to improve financial and economic viability (#29); and the need to "(D)evelop and promote resource use efficiency initiatives and environmental systems (#8).

In response to these goals Lincoln University and Landcare Research Ltd in partnership with the Tourism Association of New Zealand, have been funded by New Zealand's Ministry of Tourism, to undertake an extensive programme of research to investigate the nature of tourism yield.

## **TOWARDS A DEFINITION OF TOURISM YIELD**

In seeking a robust consideration of tourism yield we have seen the need to reach out from 'profit and loss' and 'residual income' metrics at the firm level (financial yield), to examine the costs and benefits (revenues) of public sector entities (economic yield), and when sustainability is added as a goal to a consideration to measurements of 'ecological and social services' (sustainable yield) engendered by tourism production and consumption. Our operational definitions include :

### ***Financial yield***

A measure of a firm's performance by using readily accessible accounting information, making appropriate adjustments to derive 'free cash flow', and computing its '**residual income**' (similar to EVA). Using residual income will afford us a consistent approach to analyse a firm's financial performance, based on its cost of capital (debt and equity components) and risks associated with operating in the tourism sector.

### ***Economic yield***

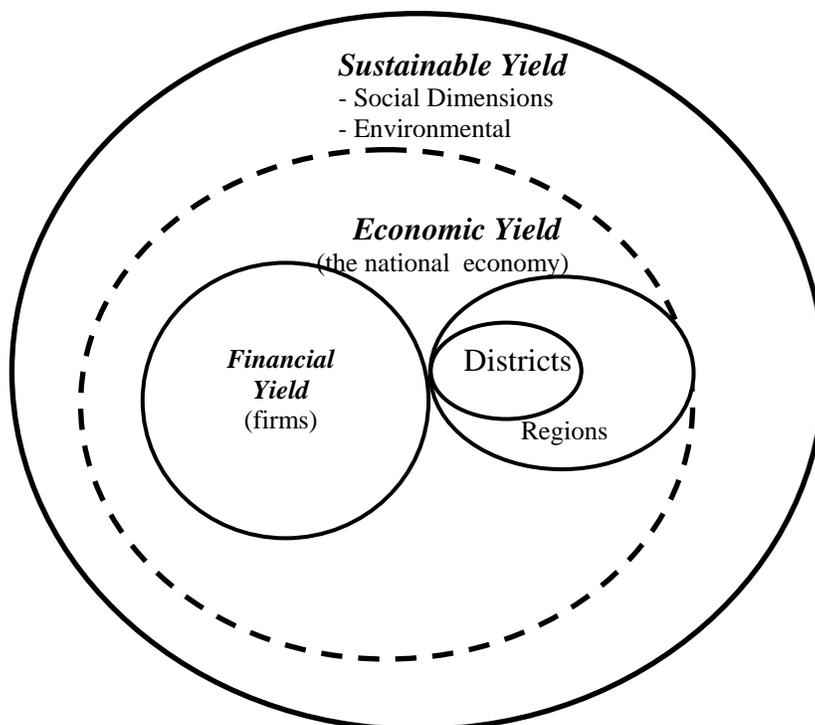
Tourism firms do not exist in isolation; they are part and parcel of the wider economy. As such, tourism firms are dependent on, and contribute to, the economic performance of local communities, regions and the nation. A tourism operator bears certain costs, such as rates, taxes, GST (goods and service tax), and direct levies. However, the tourism sector also derives benefits from the nation's infrastructure, bio-security, customs and immigration services provided by government, and promotion of tourism by various bodies (e.g. Tourism New Zealand (TNZ), Regional and District Tourism Organisations (RTOs, DTOs). Economic yield has been defined broadly here, encompassing all monetary costs/benefits attributable to the tourism sector. Measures include public sector (local, regional, and national) costs/benefits in tourism production and consumption.

### ***Sustainable yield***

For the tourism sector to be truly sustainable over time, it must be able to provide viable financial and economic returns in the prevailing social and environmental context. Some of the social and environment dimensions to be examined are non-market services provided 'free of charge' (i.e. not transactionally evident). Examples include ecosystem services, natural capital, culture, and 'life style' advantages. Tourism also brings crowding, congestion, pollution, and biodiversity loss. Some of these costs will be monetised (e.g. CO<sub>2</sub>), while others will simply be described.

It should be noted that when a price is paid for a social or environmental benefit (when it is no longer a free good), a transaction results, bringing that benefit within the economic yield definition, as used in the research programme. Thus, the boundary between economic and sustainable yields is not fixed, but shifts over time, depending on whether money has changed hands.

**Figure 1**  
**Conceptual View of Types of Tourism Yields: Firms exist in, and interact with, the wider economy at the district, regional, and national levels, and society and the environment.**



## **METHODOLOGY**

The full research programme is based upon an eight-step methodology, grouped into three themes, to be developed and implemented over a three-year timeframe.

The first theme 'private sector analysis' involves : a survey of 1000 businesses to measure financial performance across the industry; detailed (and novel) disaggregation of the tourism satellite account to derive yield deciles (by capital investment and turnover, by sector) followed by an 'in-depth' qualitative analysis of typical firms to examine responsiveness to yield management tools and strategies.

In the second theme 'public sector analysis' : economic yield is to be assessed by examining three contributing perspectives – public sector/community, business and the visitor. The public sector examination reported here involves undertaking four case studies in New Zealand regions and districts, to examine public sector costs and benefits and resource asset cost.

Synthesis and the development of tools is a final programme theme. Because tourism is a spatially diverse activity – often linked to broader socio-political goals such as regional (economic) development – a third research theme explores the question who or what forms of tourism lead to the best societal outcomes for New Zealand. The goals are to

provide tools, templates and indicators for the overall enhancement of (financial, economic and sustainable) tourism yield in New Zealand. These latter analyses are to be derived by examination of 'regional yield metrics' and detailed examination of tourists' expenditure and activities to derive yield by tourist types<sup>1</sup>.

## **CHOICE OF CASE-STUDY REGIONS**

The research plan and budget allowed for the collection information in two regions<sup>2</sup> to allow us to complete calculations of regional yield and yield per tourist type. The choice of region was however complicated by several competing factors:

- *Capital intensity*: Understanding capital investment structures is a key to understanding business and sector financial and economic yield. Thus a chosen regional case study should have a broad mix of capital intensive tourism entities.
- *Nature of tourist behaviour and visitation patterns*: Tourism hubs depend, to some considerable extent, on the range of tourist activities and attractions in their surrounding regions. In an important sense a broad range of 'things to do and see' (i.e. the attractions and activity sectors, although relatively un-capitalised [e.g., sea-kayaking], or provided by the public sector [museums, parks, recreational facilities]) are a crucial element in the evolution and health of destination regions.

Case study regions therefore need to draw on a broad range of public resources and must, of necessity, include some consideration of activity and 'lifestyle'<sup>3</sup> tourism businesses.

- *Nature of regions /destinations within a national system*  
Tourism in New Zealand, as elsewhere, is manifest in a system of tourist flows, that in turn are supported by a hierarchy of tourist places: gateways, primary destinations, tertiary destinations, and travelling routes. Case study regions that can lead to an elaboration of regional tourism yield should reach across these categories in a way that would enhance generalisation of results to the whole tourism sector and the national economy.

At a more pragmatic level the choice of regions was also influenced by *ease of data collection*, including congruence between local, regional, RTO and Department of Conservancy management jurisdictions. Background data on the size of tourism activity and economies would also assist in contextualising the regions chosen for further analysis. Based on the above criteria two regions stood out as most suitable for our study, namely Canterbury (comprising Christchurch the South Island's major city and tourist gateway) and Rotorua (a significant cultural (Maori and geothermal) tourist destination in the Central North Island). Within the Canterbury region three (of eight) territorial local authorities were studied : Christchurch City, and Hurunui and McKenzie Districts.

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1 A framework for the research programme and ongoing reporting can be found via the programme's web portal at : [www.lincoln.ac.nz/trrec/tsmyield.htm](http://www.lincoln.ac.nz/trrec/tsmyield.htm)

2 In New Zealand local governance and resource management is given effect by 'Territorial Local Authorities' (TLAs). Local authorities comprise 74 territorial authorities and 12 regional councils. The 74 territorial authorities comprise 16 city councils and 58 district councils. All are under a single national parliament in New Zealand.

3 For the purposes of this study tourism 'lifestyle' entities are defined as tourism operations established within a larger business trading unit. Examples include: farm-stay accommodation, part time activity guiding.

## **APPROACH TAKEN TO ASSESSING PUBLIC SECTOR COSTS AND BENEFITS**

There is no clear guidance in economic theory on the correct method to allocate shared costs of a service to users. Any allocation of costs and attribution of benefits to tourism require analysts' judgment about what is appropriate. In many instances there are shared costs of providing a service to both local residents and to visitors whether domestic or international. It is particularly difficult to allocate costs of public sector services to tourism when there have been significant changes in policy and in the role of government in past years or decades.

To standardise measures between programme components it has necessary to identify unit costs (e.g. \$/litre of water, average cost per museum visit) for all services that are relevant to tourism. The second step is to identify how much users currently pay for those services and whether the costs are allocated fairly. The information on how much tourism entities consume (e.g. water) and what they pay for public sector services should be available from their accounting records (e.g. rates paid) or retrievable through interviews. It is then possible to determine whether tourism entities pay the right share or whether there is a 'deficit' or 'surplus', i.e. one sector subsidising other sectors.

There are at least two ways that costs could be attributed to tourism: average total costs per visit will attribute costs equally over all users; marginal costs per visitor will attribute only change in variable costs to tourism. For example, a nation or a region decides to construct a new museum or art gallery, to achieve three objectives: preservation of culture, display of culture, and to provide a tourist attraction. In this case there is a strong argument for basing cost attribution to tourism on their share of average total costs as the museum or art gallery was provided in part for tourists to visit, and fixed costs as well as variable costs have been incurred to meet tourism's needs.

Alternatively a region may for many years have provided a museum to preserve and display its cultural heritage. There are no charges for entry and the costs of the museum are funded by rates collected from local ratepayers. If the museum becomes a tourist attraction but does not require expansion of capacity to meet a tourism-led increased demand for visits, then a case can be made for using marginal costs to allocate costs to tourism.

In the first case average costs indicate the social costs of tourism (fixed and variable costs). In the second circumstance, marginal costs indicate the social costs imposed by tourism (change in variable costs). Until there is a need for expansion of capacity the marginal cost of visits to the museum will be smaller than are average total costs and tourism will be allocated a small share of total costs of the museum. If additional users of a service create additional costs (including costs of an increase in capacity) then that additional cost is the actual cost to society of providing that service.

Our approach to estimating benefits from tourism has been to collect information directly related to tourism, such as taxes, fees and charges paid either by tourists or by tourism firms, where it is readily available. In many instances we allocate net costs to tourism based on their share of total usage of a service. An example is the Christchurch Art Gallery. This organisation had an annual total cost of operation in 2004 of \$7.419 million and total revenue of \$1.279 million. Surveys of attendees and other information sources indicate that 57 percent of attendees are visitors to the region. We can calculate tourism

share of net cost of operating the Christchurch Art Gallery at  $(7.419 - 1.279) \times 0.57 =$  \$3.5 million per annum. A similar approach can be used to determine tourism's share of the net costs of Te Papa (the national Museum).

In cases where the data do not provide identification of the revenue or expenses solely attributable to tourism we will apportion expenses and revenue according to estimated levels of visitor density, which were easily derived from national visitor monitors<sup>4</sup>. Tourism's share of local amenity use is an example of this approach.

The method of cost and benefit allocation was varied where there is information available that shows tourists' impacts differ from a simple proportion of total users. Allocation of roading costs are a case where data could be refined further. Cars impose much lower roading costs than do heavy trucks and allocation of roading costs to tourism cannot be based solely upon tourist' share of total km of driving on the roads. Their share of costs could be adjusted to recognize the low impact that a km of car travel has compared with a km by heavier vehicles.

In some cases we have not used average cost but marginal cost as in the case of congestion. Tourists may have greater discretion over their time of use of roads than local daily patterns and therefore attempt to avoid peak use periods. We have recognized this time of use factor when calculating congestion costs associated with tourism. A recent Ministry of Transport study (2005) provides data on average and marginal costs of road congestion in three main centres, for peak and off peak travel. We argue that tourists' impact on road congestion may be most accurately measured by off peak marginal costs.

A number of the costs and benefits of tourism are not traded in markets and no prices exist for them. Examples of non-marketed costs include increased congestion and crime associated with tourism. An example of a non-market benefit is improved access to services for residents of a region as a consequence of regional tourism. Where there are avoided costs of travel for example to a school, because tourism helps sustain a school in a region, these avoided costs might be estimated as an indicator of the benefits to local residents occurring because of the presence of tourism.

Tourism provides a significant proportion of employment in some regional economies and rural communities, which brings both economic and social benefits, but these have not been quantified. We have searched databases of non-market valuation studies to identify any that may be used to provide estimates of currently non-monetised costs or benefits of tourism in New Zealand, but such studies are rare for tourism.

Table 1 below illustrates the types of costs and benefit that we have investigated and the two spatial levels at which they have been studied.

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<sup>4</sup> The New Zealand Tourism Research Council (hosted by the Ministry of Tourism) collects omnibus International Visitor and Domestic Travel Studies. See [www.trcnz.govt.nz](http://www.trcnz.govt.nz)

**Table 1**  
**Examples of Tourism Benefits and Costs**

	<b>National</b>	<b>Regional/Local</b>
<b>Public Sector Benefits</b> (revenue) : <i>monetised</i>	Taxes (PAYE) GST Levies	National transfers Commercial Rates Stimulus to Regional growth
<b>Public Sector costs</b> <i>monetised</i>	Tourism Marketing National Museums Search & Rescue	Public Transport Local Museums, Galleries Events
<b>Environmental Benefits</b> <i>shadow priced</i>	Improved quality of environment	Improved quality of environment
<b>Environmental Costs</b> <i>shadow priced</i>	Congestion GHG emissions	Congestion Air Pollution
<b>Social benefits</b> (advantages) <i>listed : non-monetised</i>	Preservation and retention of culture(s) Access to services	Diversified local economies (and employment) access to services
<b>Social costs</b> (disadvantages) <i>listed : non-monetised</i>	Volunteer services	Crime, Congestion – site, Noise

Many of the benefits and costs of tourism are already measured in dollars and recorded in financial transactions. The magnitudes of some non-financial items can be quantified by way of non market valuation techniques. Others, particularly in the social dimension, could be described but are not easily quantified or measured in dollars.

## RESULTS

Tourism is a major component of the New Zealand economy and the flow of visitors both domestic and international each day in New Zealand is a significant feature of New Zealand society. At the macroeconomic level tourism value added comprised 4.9 percent of GDP in 2003/04. Tourism employs directly or indirectly, 9.9 percent of the New Zealand workforce. For several regions and districts tourism is a relatively large share of their economy (Statistics New Zealand, 2005).

The changing roles of tourism in the New Zealand economy and the evolution in government policy have been an important element in the provision of public sector goods and services for tourism. The New Zealand government has at times been owners of key tourism services (hotels, airlines), dominant funders of some activities (international marketing), sole providers of essential services (border security, roading), providers of subsidised facilities and services (art galleries, museums), funders of regional growth initiatives. Some of the actions by government that aid tourism are

directed specifically at the tourism industry. In other cases they are provided primarily for domestic residents and tourism is a secondary user of the service or facility.

**At the national level** there are two major net revenue streams from tourism: GST from international tourists of \$481 million per annum and excise taxes from international tourists of \$35 million per annum. Tourism also generates direct taxes of \$1430 million per annum, and \$730 million of GST on domestic tourism. However, we argue that a similar amount of direct taxes might be paid by another sector that used the same volume of resources as are used by tourism. It would be possible to view all taxes (\$2.7 bn pa) generated by tourism as a benefit of tourism and place these alongside tourism's share of all government expenditure, we have focused on only net costs and benefits to tourism that are achieved by using resources in tourism rather than in some other sector.

Many agencies of the New Zealand public sector provide services that benefit tourism. The Department of Conservation receives revenues from and provides services to tourism that we estimate have a net cost to the department of \$79 million per annum. This may understate the true tourism-related net cost of conservation activities by \$25-50 million per annum. We judge that Te Papa (the National Museum), the Ministry of Culture, Search and Rescue and Nature Heritage each incur significant net costs because of tourism in the range \$5 million - \$10 million per annum.

International marketing by Tourism New Zealand costs \$64.3 million per annum. The payoff from this state funded activity is a continuing flow of international tourists to New Zealand and their economic, fiscal and social impacts. Elsewhere, passenger clearance costs are partly met by the Crown and partly by users. We have allocated 59 percent of the Crown contribution to tourism, a total of \$21.4 million per annum.

Tourism in New Zealand typically involves significant amounts of travel and we estimate that tourism contributes 15.5 percent of national road vehicle km. New Zealand captures significant amounts of revenue from road users and we estimate that domestic tourists travel generates a financial surplus of \$102 million international tourists travel a financial surplus of \$19 million, for a combined surplus of \$121 million per annum. It is estimated that domestic and international tourists also contribute a net \$18 million and \$1 million per year respectively towards ACC funds.

International visitor's share of accidents is reported as double percent share of vehicle km. Travel by visitors imposes environmental and social costs as well as financial costs. Recent research by the Ministry of Transport has identified air and water pollution, noise pollution, CO<sub>2</sub> emissions, congestion and external costs of transport accidents as significant items whose shadow price can be estimated. Based on information from that study we have estimated the annual costs associated with tourist's road travel to be: road accident externalities \$57 million; congestion costs \$78.6 million; noise from transport \$3.9 million. Transport uses large volumes of fossil fuel and contributes to climate change and to air and water pollution. We calculate that tourism's share of these costs is \$80 million per annum, of which carbon costs are \$62 million per annum. These figures are examples of shadow costs and are key indicators of the sustainability costs associated with tourism. Under present resource management and pricing regimes similar cost estimates would be anticipated for other productive sectors (e.g. agriculture, forestry) of the New Zealand economy (Patterson and McDonald, 2004).

Tourism impacts the environment at a limited number of fragile sites, and imposes noise costs on recreationists in some national parks. Conversely, tourism brings substantial external benefits to many New Zealand residents via improvements in the range and quality of services available in cities, towns and national parks. Tourism contributes to more diverse cosmopolitan communities that are attractive to many people. The dollar magnitudes of these external benefits have not been estimated in New Zealand hence it is difficult to assess their importance and to compare them with the fiscal costs that have been quantified. Notwithstanding this, current assessments of the social impacts of tourism indicate that New Zealand residents consistently list greater benefits from tourism than social and community costs (Shone, Horn, Moran, Simmons, 2005 forthcoming).

In summary, central government collects tax and excise revenue of over \$500 million per annum from international tourists. In roading, we estimate tourism contributes a net surplus of \$97.3 million per annum. Beyond this tourism also generates direct taxes of \$1,430 million plus GST on domestic tourism of \$788 million per annum. Government expenditure at the national level can be grouped into two areas:

- core public sector tourism activities (e.g. TMT, TNZ...)(\$123 million)
- related public sector infrastructure tourism activities (predominantly for access to environment, culture and heritage e.g. DoC, border control ....) (c \$95.3m)

These estimates indicate that tourism revenues exceed costs at the national level, and this remains the case even when (transport related) externalities (\$258.8m p.a.) are included in the comparison.

***At the local/regional level*** we have examined tourism's impact on publicly provided services in the cities of Christchurch, and Rotorua, and in Hurunui and Mackenzie districts. These regional studies explore a range of costs and benefits and provide interesting insights, but it is not claimed they are representative of all regions in New Zealand. Our approach is to estimate tourism's share of the costs of providing services and to calculate the revenue that is garnered from tourism either directly or indirectly to pay for these services.

Results of the four case studies show that local public sector costs and revenues are of a similar magnitude. As a percentage of estimated tourism costs, tourism revenues were 5 percent less than costs for Christchurch City, 15 percent less than costs for Mackenzie District, 13 percent greater for Hurunui District and 28 percent greater for Rotorua Region. However, the estimated totals in the sections above and the derived percentages cannot be considered robust. They are subject to many assumptions and data limitations. Each of the four case-study areas reflect their distinct geographies. Christchurch the largest city in the South Island provides a number of large public facilities (e.g. Museum, Art Gallery, Parks...) that are used by residents and tourists. Rotorua a smaller North Island city is a significant cultural tourism destination but is well supported by 'state' highways whose costs remain allocated at the national level.

Revenues from specific activities vary greatly within and between regions, but only the HDC owned Hamner Springs Thermal Resort stood out as a dominant source of local public revenue (around 70% of total). In all the other three cases, rates (general and targeted) attributed to tourism accounted for the majority of tourism revenue.

The two small Districts studied in Canterbury are very strongly dependent on and impacted by tourism, with visitor densities of 22 percent for Hurunui and 48 percent for Mackenzie. The structure of local public sector activities in rural Districts is also quite different from that of Districts containing large towns and cities. Local provision of general infrastructure and services may be more limited, but to the extent that it is provided, *per capita* costs are often higher. Tourism impacts on roading costs are, however, mitigated by the fact that most visitor travel is on State Highways. Impacts on other infrastructure are clearly significant, although the use of average rather than marginal costs may have overstated this to some extent.

Tourist densities have increased steadily in New Zealand during the past two decades. The flows of both domestic and international visitors can be a mixed blessing to communities. Quantifying these costs and benefits can be completed in some cases by using existing social statistics or other indicators such as trends in availability of medical services or restaurants in small communities. Where possible we have provided examples from existing studies of the ways that tourism has benefited (seasonal employment, better facilities in National Parks, greater frequency of public transport) or imposed stresses or social costs (crowded local parking, increased demands on volunteers, loss of cultural integrity) at national, regional or local level. Non market valuation studies have been completed in USA, Australia and other countries to estimate dollar values of some of these tourism related items but few such studies have been completed in New Zealand.

In Rotorua, non-financial impacts of tourism appear to be of more concern than in the other three cases. These impacts included dealing with tensions around inner-city parking arrangements and concerns about tourist involvement in road traffic accidents. Crime, or at least tourist perceptions of crime, was also of concern.

Our method of allocating rates revenue to tourism reflects economic principles of a demand-driven economy. However, this perspective does not appear to match those of Councils. Local Authority rates, whether general or targeted are based mainly on the capital value of properties. Often the same rates apply to residential properties and businesses. Implementation of user-pays principles is generally limited. We suggest that there are two ways for Councils to ensure that tourism does not impose net financial costs on them. One way is to use targeted tourism rates to cover a wider range of costs. Another is to extend user-pays principles so that rates paid by all rate-payers better reflect their individual impacts; tourism-related or otherwise.

## **DISCUSSION**

This paper presents a 'work in progress and only initial findings are reported. We have set out an approach to determining tourism yield, and within that explored definitions and methods required to assess public sector costs and benefits. Together these largely account for concepts of economic, and some key elements of sustainable tourism yield.

We have tackled the challenging task of estimating the costs and benefits that tourism imposes on, or brings to, the New Zealand public sector and to New Zealand society. Our analysis applies a specific question to identify the costs and benefits of tourism at the national level. What level of cost or benefit to the national public sector, or to New

Zealand, would occur in the absence of tourism? At a national level it can be argued that resources might be allocated to other sectors following price changes or other events, and that the national economy, would, after a lag, return to near full employment. In cases where it is judged the level of service provided by the public sector is uninfluenced by the presence of tourism, no cost or benefit is attributed to tourism. If a public sector activity is clearly linked to tourism we attempt to estimate the size of public sector costs and benefits associated with tourism. In many cases services and facilities are provided for both general economic or social benefit and for visitors whether domestic or international. In those instances costs and benefits are attributed to tourism based upon their share of total usage. Total cost data are used to calculate shares of costs in many cases. Occasionally, where marginal cost data are available such as road congestion costs, we use marginal cost to attribute costs to tourism.

In regions and districts where tourism plays a major role in their economies it is less plausible that resources could be reallocated to another activity in the absence of tourism and that the region or district could return to near full employment. The approach taken at region and district level is to ask "What share of costs and revenues might reasonably be attributed to tourism?" recognising that many facilities and services are provided primarily for locals? We have based decisions upon tourism's share of usage where the data are available, or proxies of that ratio in other cases. The choice of average or marginal costs is also considered on a case by case basis. The approaches used at regional and district levels are partial equilibrium analyses. No attempt is made to study the effects of tourism upon price levels, labour markets, or employment in the rest of the economy.

Throughout our analysis attempting to unravel why a service or facility is provided or funded by government has emerged as an extremely difficult task and this report our research programme did not attempt to do that. The objective of this research project has been to evaluate the impacts of tourism upon the New Zealand public sector. This strand of the research project has collected data that will be used elsewhere in the research programme to determine if tourism is generating both economic and sustainable yield.

The research has studied the impacts of tourism at three levels: national, regional and local. Figure 2 illustrates the types of costs and benefits that we have investigated and the three levels that we have studied.

**Figure 2**  
**Examples of Tourism Costs and Benefits Studied**

	<b>Economic costs</b>	<b>Social costs</b>	<b>Economic benefits</b>	<b>Social benefits</b>
<b>National</b>	International marketing	<b>CO<sub>2</sub> emissions</b>	GST from international tourists	<u>More services in National Parks</u>
<b>Regional</b>	Public transport for visitors	<b>More road congestion</b>	<u>Stimulus to regional development</u>	<u>Seasonal employment</u>
<b>Local</b>	Art gallery operational costs	<u>Increased crime</u>	Rates from tourism firms	<u>More services in small towns</u>

Key:

Grey – costs and benefits estimated from existing data sources

**Black** – quantified using prices from existing non market valuation studies, or shadow prices

Underline – quantification possible, but not monetized in this report

Many of the economic costs and benefits of tourism are measured and recorded in existing financial transactions. The magnitudes of some social costs and benefits are quantified by way of non market valuation techniques or mitigation cost measures. Others costs and benefits can be described but are not easily quantified or measured in dollars. We have used existing financial data where they are available, shadow prices where they are available and qualitative assessments in cases where there is no financial or economic data available.

Our initial findings indicate that central government derives a cash surplus from its tourism sector based activities. Notwithstanding this overall position there are a number of caveats that need be borne in mind. Most of these rest on the core approach – the determination of ‘marginal’ costs and the relationship between static and equilibrium based conceptualisations of the national economy, and the role that tourism might play within it. There also exist significant temporal elements to government investment and how past costs might be considered in the present (political) economy. Results at the local (and regional) level indicate that costs and benefits are broadly balanced especially when the context of the different case study areas are brought into consideration. While not all dimensions of tourism impact have been quantified it appears that in aggregate tourism benefits exceed costs, that may disguise some local cases where acute tourism pressures mean costs could exceed benefits.

The concept of 'local yield' appears more relevant than that of 'regional yield'. The main impacts of tourism on the public sector appear to be on Central Government and Local Authorities. These are also likely to be the levels at which decisions about and directly affecting tourism are made.

Notwithstanding these broad statements the research raises a number of broader policy issues including whether, given tour and travel patterns in New Zealand central government offers adequate support to peripheral economies, and whether, given the significance both in terms of visitation (Tourism New Zealand, 2006) and satisfaction (Tourism New Zealand, 2005) of New Zealand's natural environments (including areas managed by the Crown) New Zealand as a whole extracts sufficient 'rent' for access to and management of the nation's key tourism resources.

As noted in the introduction this project comprises one of several themes and approaches in our assessment of financial, economic and sustainable yield for tourism, which has the twin goals of determining 'high-yield visitor (types)' and developing tools for both the public and private sectors to enhance tourism's performance in the national economy.

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