

# Regional Tourism Measurement: Concepts and the New Zealand Experience

## Requested Comments: Session II, Tourism and Territory

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### Summary

New Zealand has developed a comprehensive set of statistics to support the tourism sector. The main purpose of these collections is to provide national-level measures. However, it is clear that decision-makers require information that is more relevant to their operating environment, whether this is by sector or by region. The Ministry of Tourism has taken a leadership role to ensure provision of reliable information to these users.

The Ministry currently provides a range of regional-level information to the sector: high quality data from the accommodation survey; data from the international and domestic travels surveys that set out the characteristics of tourism in regions; regional analysis developed as part of the Ministry's forecasting programme; and, a Tourism Flows Model that uses itinerary data to map tourism activity in New Zealand, including in regions. This system provides comprehensive coverage of the key tourism variables at regional levels in New Zealand, although there are legitimate concerns about data reliability at these level.

The Ministry recognises these data reliability issues and has developed a work programme to address or mitigate them. This includes: improving the quality from the key international and domestic travel surveys; fostering the development of sector-based data collections and especially those that have regional data; and, utilising administrative data including using electronic card transaction records to measure tourism activity. Finally, the Ministry is developing a more sophisticated modelling approach to regional tourism reporting that integrates multiple data sources and reconciles the differences between the datasets.

The New Zealand approach for preparing regional tourism information is well developed, but it has its challenges. A number of important steps are underway based on both improving traditional sector collections and developing new approaches that are expected to considerably improve the quality of information provided to users.

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In addition to the production of the CTD, the Ministry of Tourism (TMT) places attention on the equally important functions of the analysis of the statistical resources and dissemination of data and analysis to users. The Ministry supports a comprehensive website ([www.tourismresearch.govt.nz](http://www.tourismresearch.govt.nz)) where data is freely available along with a number of analytical and research outputs. It also produces a number of publications containing key information, such as its annual forecasting booklet, and it is increasingly seeking to engage with industry to discuss the data and what it means for users.

### **Rationale and Management Approach**

The New Zealand system is a result of policy interventions over the past decade to develop and improve the statistical resources available to support the tourism sector. These interventions were based on the need for leadership in an environment where fragmentation of effort would likely have been the natural outcome. The two key steps taken were:

- 1) Responsibility for all elements of the CTD was vested with the Ministry of Tourism rather than with a number of other agencies. This enabled the Ministry to manage the different datasets as a coordinated ‘system’. While the various projects are delivered by a number of parties, including by New Zealand’s official statistical agency (Statistics New Zealand, for the TSA, International Visitor Arrivals (IVA) and Commercial Accommodation Monitor (CAM)), the Ministry has the ability to ensure alignment of methodologies and classifications. This approach has established clear lines of accountability for the CTD, with the Ministry being the responsible agency.
- 2) Ongoing funding was provided by central government to the Ministry of Tourism to operate the CTD. This enabled the Ministry to develop a long term view on both the quality and coverage aspects of operating the CTD, and to enable the provision of the statistics to the sector at no charge to all users who wish to access the information.

The CTD has now been in place in its current form since 2002. The Ministry of Tourism has established a division to operate and manage the CTD. The annual budget is NZ\$4.3 million (US\$3 million) that funds the procurement of the various data collections and the eight Ministry staff members working on this programme.

### **Operating Environment**

Since assuming responsibility for the CTD, the Ministry has sought to be well informed in its management processes and in ensuring it is connected to the wider national and international contexts that are relevant to the operation of the CTD.

The first major investigation was in 2002 when the Ministry undertook the *Review of Core Tourism Statistics*. This review generated a large number of recommendations that have subsequently been implemented and have guided the programme over recent years.



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In 2008, an *Evaluation of the Ministry of Tourism Research Programme* was undertaken by an independent evaluation team and this examined both the user and producer perspectives of the CTD. The evaluation found that the programme was meeting its objective and was highly valued by its users. The concerns identified from the key users were around data reliability, particularly at the regional level and for international visitor markets, and the difficulty of reconciling data from different sources. As such, the evaluation highlighted areas where work was required and its recommendations now form the basis of the programme’s development, and these areas are discussed later in this paper.

The *New Zealand Tourism Strategy 2015* (released in 2007), reinforced the importance of high quality sector information to the sector to support decision-making, and made similar recommendations to the evaluation above in terms of enhancing data quality, providing better regional and sector data, and establishing quality measures for the CTD.

In managing the CTD, the Ministry seeks to align with the international framework for tourism statistics established by the United Nations World Tourism Organisation and most recently set out in the *2008 International Recommendations for Tourism Statistics* (IRST 2008) and the *2008 Tourism Satellite Account: Recommended Methodological Framework*. The international comparability and assured ‘best-practice’ that are inherent in these documents adds greatly to the integrity of the New Zealand system of tourism statistics.

The Ministry of Tourism manages the CTD within a wider context established by New Zealand’s Official Statistics System (OSS). This system is overseen by Statistics New Zealand and all government agencies producing official statistics operate under its umbrella. A feature of the OSS is that it has established a set of *Principles and Protocols for Producers of Tier 1 Statistics* that forms the backbone of the Ministry’s approach to managing the CTD. The IVA, CAM, DTS, IVS and TSA have the high ranking as Tier 1 Official Statistics given their role as statistics of national importance. Being part of the OSS also means that the Ministry can draw on the skills and experience of Statistics New Zealand when complex statistical issues are being addressed.

### The Information Users

The key rationale for the CTD is that it is a response to the information needs of a significant part of the New Zealand economy (18.3% of export earnings and directly and indirectly 9.2% of GDP). The information is needed by a wide range of users e.g. central and local government, large and small tourism businesses, the investment community, tourism associations, industry commentators and media, regional tourism organisations, and academic researchers and students.

There are wide ranging information requirements within these groups (e.g. simple data, in-depth data users, those needing key performance indicator (KPI) measures, those needing wide



ranging analysis of the characteristics of tourism, and more). As such, the Ministry configures its statistical outputs so all users can readily access the information they are seeking.

The Ministry has developed a research website as its main dissemination tool and has a range of publications to support this effort. The website is based upon making the ‘tiers’ of data freely available to users. In addition, it is important to recognise that Statistics New Zealand, as the official statistical body for New Zealand, has ‘first release’ rights to the statistics it produces, including the IVA, CAM and TSA, with these statistics also available on its website ([www.stats.govt.nz](http://www.stats.govt.nz)).

### Data Coverage

This CTD system captures data on a number of aspects of tourism that all contribute to the overall understanding of the sector (refer Table 1 below).

**Table 1: Key Variables and CTD Source**

Key Variable	Source	Quality
International Arrivals & Departures	IVA	Excellent
Origin, purpose of visit	IVA	Excellent
Spend	IVS, DTS	Good
Nights	CAM, IVS, DTS	Good
Activities	IVS, DTS, RVM	Good
Itineraries	IVS, DTS	Good
Motivation	RVM	Good
Satisfaction	RVM, IVS, DTS	Good
Transport used	IVS, DTS	Good
Accommodation capacity	CAM	Excellent
Accommodation utilisation	CAM	Excellent
Regional information	IVS, DTS, CAM, RVM, Forecasts	Low/Good/Excellent
Future outlook	Forecasts	Good
GDP, exports, employment	TSA	Excellent

This table highlights that there is a good coverage of the key variables that are logically needed to understand the way tourism operates within an economy. However, while there is coverage across these key variables, the quality of the data does not always match the actual requirements of users, especially at a regional level.

To generalise, the CTD is regarded as providing quality data at the national level. The arrivals and departure statistics, the accommodation data and the TSA are regarded as being of excellent quality that can be used for detailed analytical and performance measurement purposes.

The other datasets are less strong given that they are sample surveys that are subject to sampling limitations. For instance, while the IVS and DTS provide good national-level estimates for key variables, as these datasets are further disaggregated the data quality issues become more acute, whether this is for origin market analysis, activity analysis or in the conducting of analysis at sub-national levels.

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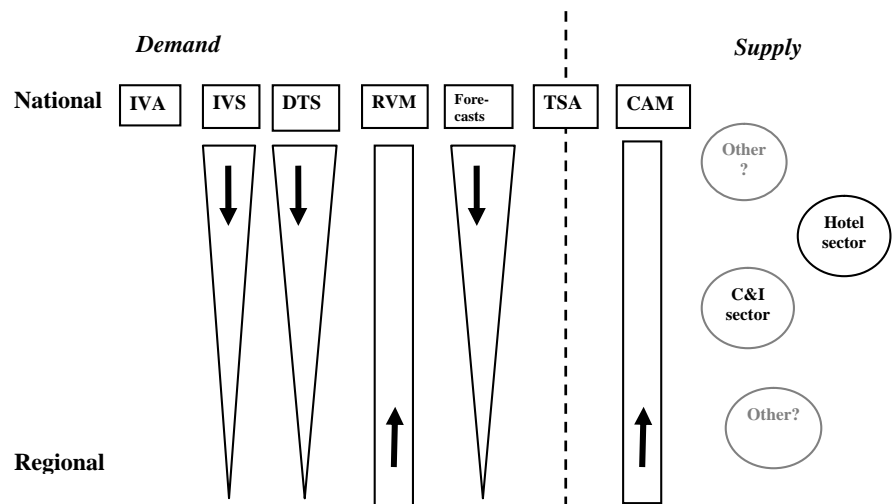


## New Zealand Regional Data Approach

While New Zealand is a small country with a population of a little over 4 million people, it has a fragmented regional tourism system with 30 regional tourism organisations (RTOs), some of which are very small in terms of geographic size and tourism density. Nevertheless, from an information demand perspective, this is the level of regional tourism break-down that the Ministry of Tourism is seeking to achieve in delivering regional tourism data and analysis.

New Zealand's sub-national tourism statistics and analysis flows directly from the CTD with the 'national' surveys disaggregated to provide regional-level information. Figure 2 below highlights how each of the elements of the CTD operates in relation to the national and regional data.

**Figure 2: Attributes of the Core Tourism Dataset**



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This emphasises that the CTD is primarily designed to produce national-level measures. The IVS and DTS do provide a source of ‘top-down’ data to regional levels but in so doing are subject to increasing error margins the further the data is disaggregated. On the other hand, the CAM and the RVM are ‘bottom-up’ collections. As such, they provide high quality regional data, but with limitations in terms of their narrowness of scope or representation, e.g. the RVM is a collection in only six of New Zealand's 30 tourism regions, and the CAM has a limited range of measures, such as accommodation capacity, utilisation and occupancy.

The Ministry recognises the strengths and weakness of the regional data from the CTD, and it seeks to make the most of the available data though making as much as possible available to inform the sector of regional tourism activity. In doing so, the Ministry faces a sometimes difficult balancing act between making data available and releasing what may be weak data.

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- **CAM.** Made available by TMT and SNZ to RTO level. Additional data without accommodation type breakdowns is available to territorial local authority (TLA) level - the lowest level of local government jurisdiction in New Zealand. The CAM data is regarded as by far the most reliable regional-level data and is suitable for year-by-year and month-by-month performance analysis (KPI quality).
- **IVS and DTS.** Limited regional-level IVS and DTS data is made available by TMT. Data released includes visits and nights, visitor origin, purpose of visit, activities and transport used. Regional expenditure estimates are not released. IVS and DTS data at the regional level needs to be used with care. It is suitable for 'characteristic' analysis in that the nature of tourism to a region can be readily determined from the data, but there is insufficient year-by-year stability to allow it to be used for KPI purposes.
- **RVM.** The RVM regional data is owned by each of the six participating regions so is not generally released at this level. The Ministry publishes a benchmark report from the RVM that sets out the motivation, satisfaction, activities etc, as aggregated from the six regions. While not released separately, the RVM's regional data can be analysed by the Ministry to understand regional differences, e.g. regional expenditure differentials.
- **Regional 'Base-year' Estimates and Forecasts.** As part of its annual forecasting project, the Ministry prepares 'base year' estimates of regional tourism activity, with forecasts applied off the base established. These regional reports provide a convenient summary of international and domestic tourism within a region. This work is based largely on IVS and DTS data and covers visits, nights and also expenditure estimates. While experience has shown that the base year estimates vary too much from year-to-year to be highly reliable, they do offer a mechanism to assess the varying expenditure in regions as a proportion of the overall national figures, and they do bring a full set of variables together where users can access in one place.
- **Tourism Flows Model (TFM).** This project uses the regional forecasting modelling and utilises the itinerary data from the IVS and DTS, to build a model of tourism flows throughout New Zealand. The movements are expressed in a map-based system that is available via the Ministry's research website. Other data, such as traffic counts of particular roads are incorporated into the model to allow such measures as the proportion of total traffic that is tourism-related. Attachment 2 sets out further information on the TFM.

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While this is a comprehensive response to users' needs for regional tourism data, the recent evaluation of the Ministry's research programme and the New Zealand Tourism Strategy highlights that it is not meeting the actual requirements of many regional users. For instance, should a region undertake an

international marketing campaign in Australia, how can it measure its effectiveness? The CAM data is reliable, but does not isolate Australian guest nights. The IVS does, but the data is not sufficiently robust to track changes effectively at that level of disaggregation. As such, the regions do not have the research tools they need to determine the effectiveness of the marketing spend.

Also, there is scope for users to take the weaker IVS and DTS outputs at face value and undertake analysis that generates misleading results that are determined as much by error margins as real movements in the data. The potential for ill-informed decisions is therefore a concern. On the other hand, if data is not released, the ability to conduct valid and highly useful 'characteristic' analysis would be lost. Clearly, judgement is needed to determine the level to which data is released, and on how it should be best used.

The Ministry's current response to these issues is to recommend that for regional level usage, the CAM be used for performance measurement purposes, with the other resources used for 'characteristic' analysis. This is considered a valid position given the ability of the data to tell comprehensive and compelling stories of sectors, regions and market segments.

The approach set out does not include regional TSAs. There have been investigations in the past by Statistics New Zealand on the feasibility of generating regional GDP estimates for New Zealand, but the conclusion of this work was that the whole-of-economy input data was not sufficiently strong to support robust estimates. As this would be needed in order to generate full regional TSAs, this work has not been pursued. Instead, the Ministry has sought to provide a range of key variables (such as arrivals, nights, expenditure, activities and transport types) as its main means of delivering regionalised information.

A major research project undertaken in New Zealand was completed in 2007 looking a 'yield' in tourism from a number of perspectives. A part of the research looked in depth at the effect of tourism for four regions. This found that local government investment in tourism was largely cost neutral for the local government bodies, but that there were considerable flow-on benefits from tourism to the private sector and to communities in terms of jobs, business and household income and 'residual income' (or Economic Value Added). The research highlighted that there are a number of ways the various costs and benefits of regional tourism can be calculated, and so it provides a framework for analysing the overall impact of tourism at regional levels.

### **Development Opportunities**

The central issues faced by the Ministry in terms of its delivery of both national and regional information are largely around improving the overall quality and coverage of the information provided, including by enhancing the quality of the national collections, developing additional tourism-related data sources

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and developing better ways to use and integrate the pool of statistical resources that are available.

### **Improving Quality of Existing Data**

The quality of data is a consequence of a number of factors, some of which are controllable, while others are outside effective control. For instance, the CAM is a high quality collection, but of limited scope. Ideally this would be widened to include detailed origin of visitor data, but this is not possible due to the high load that the survey places on respondents. Similarly, the IVS and DTS could be significantly improved by increasing sample sizes, but this is a costly option and again with respondent load implications (and ultimately there would still be sample size limitations).

The Ministry has recognised the weaknesses in the IVS and DTS surveys as a key issue and is implementing a programme to develop the surveys so that it is confident that optimal data quality from the existing sample size limitations is achieved. It has moved from a model where the provision of the surveys was totally operated by a market research company to full in-house management of the statistical methodology and processes, with only the data collection out-sourced. At the same time, the Ministry has also made a number of methodological changes to improve data quality and reliability and to align with UNWTO recommendations, for instance to improve the weighting methodology and to remove a number of capital items that had previously been included in the IVS series.

It is the expectation that the changes underway will significantly improve data quality and so the reliability of IVS and DTS, and will make the process significantly more transparent. When this work is stabilised, the Ministry will publish updated error margin information and provide advice on best practice in using the data so users are aware of its quality and how it can be appropriately used.

The Ministry will also be in a position at this time to consider options for an increase in sample size or improving sampling coverage (e.g. to interview in airline business lounge facilities) to provide a step-change to the quality of the surveys, particularly if it is shown that these changes will increase data quality at the regional level.

An important finding of the evaluation was that users were having difficulty with reconciling data from different datasets. While recognised by the Ministry, issues in this area are not easily solved given the individual characteristics of the datasets. The emphasis in addressing these issues is to firstly seek to standardise the definitions and classification as much as possible and to secondly make it transparent where the inconsistencies exist and provide advice to users on the best means of using and comparing different dataset sets. Also, the aggregating projects such as the TSA and forecasts can reconcile some of the differences, and more sophisticated modelling may be able to do this more effectively in future.

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## Using New Data Sources

There is considerable scope to draw upon additional data sources to supplement the existing national and regional information, particularly to establish new variables and to enable cross-referencing across the existing data sources.

The record of electronic card transactions from the banking system offers a significant opportunity to add to the knowledge base of tourism. In New Zealand, the electronic card transactions of a number of banks are channelled through a separate company from which records of transactions can be made available for analysis. This system covers around 80% of all electronic transactions in New Zealand and so can provide robust insights into the tourism sector.

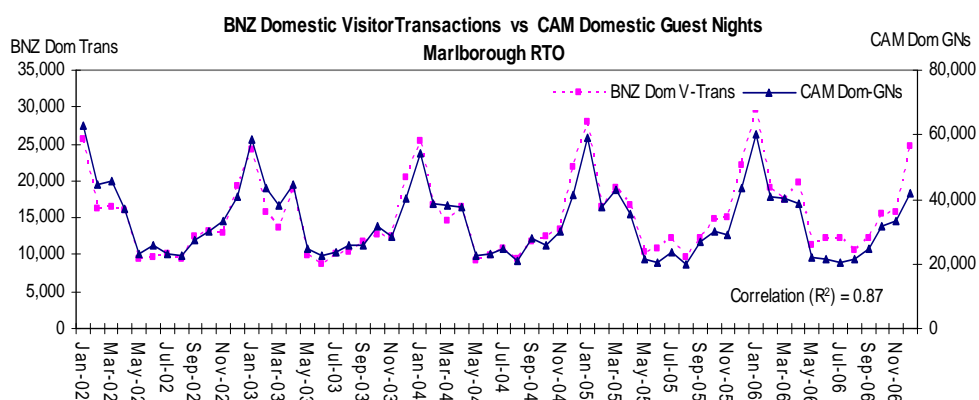
The Ministry of Tourism has conducted a trial of the use of electronic card transaction data using the records of one bank (Bank of New Zealand) based on three regions in New Zealand. As shown in Figure 3 below, there is a good match between the transaction data and the reliable CAM guest night data for the Marlborough region. The patterns were largely similar for the tourism destination of Queenstown, but less strong for the large metropolitan area of Auckland where it appears that the large number of transactions associated with Auckland's role as New Zealand's centre of commerce distorts the data.

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**Figure 3: BNZ Transactions and CAM Guest Nights**



The trial highlighted that while considerable care will be needed in interpreting the data outputs, there is potential for high quality data, particularly for those variables that are not well covered elsewhere by the CTD, e.g. expenditure on accommodation type in a region by origin markets. It is anticipated that the data will be of a quality appropriate for KPI purposes. To refer to the example earlier in the paper, we expect that, for instance, Australian expenditure on accommodation in a particular region will be able to be measured and tracked over time with a high degree of reliability.

To advance this, the Ministry has commenced a project with the company that handles the wide body of electronic card transaction records, focussing initially on the accommodation sector. This project will generate data with breakdowns for accommodation type and covering both the TLA and RTO levels. After one year, the Ministry will assess the results and

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consider the value of the data and further development options, e.g. to include activities, rental cars etc.

### **New Sector Collections**

There is interest by a number of sector groups in collecting data that provides a picture of the nature and performance of their sectors. A number of such collections already exist in New Zealand, e.g. in the hotel, convention and incentives and ski sectors, and more. While such sector-based collections are not specifically focussed on regional data, there is scope for such collections to contribute high quality regional information.

The collection of the New Zealand Hotel Council (NZHC) is the best example of a sector-based collection. The Ministry funded the development of the system several years ago for a research company to operate a web-based collection system that captures a range of data, including capacity, price, guest nights, etc from the participating hotels (covering most large hotels in New Zealand). This approach has enabled the NZHC to track such strategically important measures as capacity, occupancy, room rate and revenue per room. As the collection is 'bottom-up', the results are prepared on a regional basis and they do highlight the different characteristics of the regions involved.

As a result of this collection, the NZHC members have access to reliable data on their sector, including sensitive but valuable financial information that is not available from such publicly-funded collections as the CAM. While the data has commercial sensitivity, the Ministry and the NZHC have agreed a basis for the Ministry to use the data for analytical purposes and to disseminate high level results to the wider industry.

There is opportunity to foster the development of such collections in other sectors, and to enhance those collections that already exist. A number of discussions are currently taking place to establish collections based on NZHC model.

The key objective from a Ministry of Tourism perspective, is that these collections provide the opportunity for sectors to put in place the information that is most important to them, and to then fund such collections themselves. In turn, having this data available to support wider sector analysis is important, both for the sector-specific results, and for the potential to integrate the data into wider analysis efforts, both nationally and regionally.

In addition to these volume or economic measures, New Zealand is developing a set of environmental sustainability indicators for the tourism sector. These cover a range of factors such as water quality, energy use, biodiversity, and more. The intent of this work is to establish national measures to provide an overall assessment of New Zealand progress in managing tourism-related environmental factors, but as much of the data to be used is 'bottom-up', there will be scope to consider regionalising at least some of this information.

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### Developing New Modelling and Reporting Approaches

Having built the raw data resources through improved quality or adding new data sources, the next key challenge is to consider how the aggregate of these resources can be used to express a complete picture of tourism activity, whether at national, regional or sector levels.

Such analysis is currently in place to some degree. The TSA utilises a wide range of tourism and economic data to determine national-level tourism estimates (although this is confidential to the official statistics agency that produces the TSA) and the tourism forecasting programme uses mainly IVS and DTS data to produce a range of base-year and forecast estimates. In the case of the forecasts, however, we have found that the 'base-year' estimates have tended to moved considerably from year to year due to technical changes to the approach used, with the result that the value of the series to users is lessened.

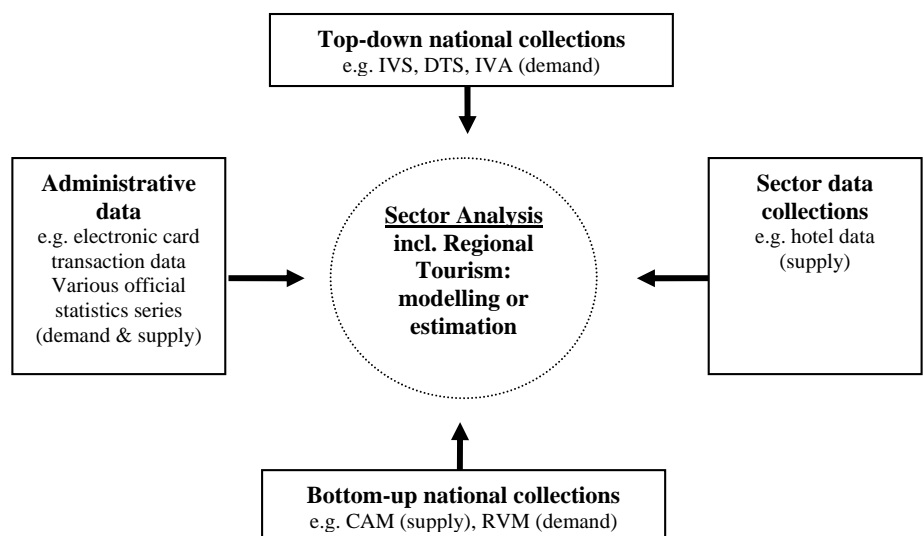
The wider question is how all of the sector data can be used to support all sector analysis, and what needs to be put in place to allow this to happen in a robust and considered way. Figure 3 below highlights how the different data sources can be considered in relation to sector analysis, including estimating regional tourism activity.

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Figure 3: Model for Regional Tourism Estimation



Such an approach has a number of attractive attributes. For instance, it provides the ability to assess the value of individual data streams and to decide the most robust data to place reliance on. It can also allow individual data streams to be adjusted for differences in approach, e.g. IVA being full population, while IVS is aged 15 and over. Using expenditure data from IVS, DTS, RVM and electronic cards transactions may allow an improved methodology of determining regional expenditure differentials and therefore more tailored estimates for each region.

However, it is clear that such modelling has disadvantages as well. The model can involve judgements that adjust the input

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data, and these judgements can vary over time. The modelled results will likely move away from statistics underlying the analysis and so these 'estimates' may differ from the raw statistics that are also publicly available, and so adding to the reconciliation issues that already exist.

Nevertheless, there are clear advantages in developing models to integrate the various data streams. New Zealand will be taking a staged approach to developing such models over the next few years.

The base-year component of the forecasting programme will be a first opportunity to explore the feasibility of comprehensive data integration. From this, more experimental investigations will be pursued, and we anticipate that a number of significant and challenging issues will emerge. We do, however, consider that this work will be the most effective way of building a comprehensive understanding of regional tourism in New Zealand.

For the Ministry, this stream of work represents an evolution from generating and presenting statistics, to preparing modelled estimates. This is seen as a natural development of the Ministry's leadership role as it will enable the best use to be made of the wider pool of existing resources to better meet the actual information needs of many users.

### **Discussion**

Regional tourism information is of importance because it is at this level that many decisions are taken, whether by central or local government, or by tourism businesses, most of whom operate regionally and are part of the wider tourism industry operating environment.

It is therefore imperative that high quality information is provided at these regional levels and the Ministry of Tourism has taken a lead role to generate a comprehensive set of information in this area. In addition, the Ministry has an important role in providing guidance for regional statistical development and how the available data can be analysed for a range of analytical purposes.

As the discussion on the New Zealand experience highlights, there are a number of ways that regional information can be provided. However, the weaknesses of each of the individual approaches can cause considerable difficulties that are not easily addressed. For instance, the population of the datasets can be different e.g. the New Zealand IVA covers all travellers, whereas the IVS covers only travellers aged 15 and over. The inherent quality is also important to consider e.g. the census-based CAM provides high quality data at regional levels whereas the IVS and DTS are sample surveys with significant error margins at regional levels.

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The focus of the Ministry of Tourism research programme relates to both national and regional information, and therefore it covers the following:

- Ensuring that the quality of the data from the various collections is as good as is possible given the constraints of cost and respondent burden.
- Clearly setting out the limitations of the data (e.g. error margins) with recommendations of what is appropriate for use.
- Make every effort to align the classifications used in the various collections to reduce inconsistencies, and where differences cannot be avoided, make sure these are clearly set out.
- Develop means of drawing on supplementary data sources in addition to specific tourism collections. For instance, New Zealand is currently developing a system to use electronic card transaction data to access tourism-related transactions, initially in the accommodation sector.
- Foster the collection by stakeholder groups of the data that is of interest to them, and ensuring there is public access to this data for dissemination of analytical purposes (e.g. the NZHC collection in New Zealand).
- Establishing a matrix of data from the different datasets so that the key data is readily accessible to users, while ensuring any limitations are clearly expressed.
- To set out a 'complete' picture of regional tourism, there needs to be a means to integrate the various data sources and balance these where necessary. New Zealand's current regional forecasting programme does this to some degree, but given it is largely IVS and DTS-based, there is scope for the model to be significantly developed by integrating a wider set of data.

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Maintaining the Ministry's research programme in itself is a significant challenge in terms of the skills required and the financial resources to support the work. Developing the programme further through the initiatives set out in this paper will create further pressures and so prioritisation of effort will be required. The focus of the Ministry of Tourism will be to take a long term view to the development of its programme and focus on where it can achieve the greatest gains.

The Ministry's programme exists because of the demand for information from the wide range of users across the tourism industry in New Zealand. The priorities, therefore, will continue to be determined by what it is the users need.

Finally, the Ministry's leadership role in this area has resulted in better regional information being provided to the sector, and there is considerable scope for further gains as existing data is improved, new data sources are utilised, and more sophisticated modelling and reporting approaches are developed and implemented.

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## Glossary of Terms

CTD	Core Tourism Dataset
IVA	International Visitor Arrivals
IVS	International Visitor Survey
DTS	Domestic Travel Survey
CAM	Commercial Accommodation Monitor
RVM	Regional Visitor Monitor
TSA	Tourism Satellite Account
TFM	Tourism Flows Model
TMT	Ministry of Tourism
SNZ	Statistics New Zealand
OSS	Official Statistics System
RTO	Regional Tourism Organisation
TLA	Territorial Local Authority
KPI	Key Performance Indicator

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## Attachment 1: New Zealand's Core Tourism Dataset

### International Visitor Arrivals (IVA)

Census collection from all travellers arriving and departing New Zealand airports and seaports. Data is processed by Statistics New Zealand. Statistics are released monthly.

**Key measures:** Total arrivals and departures, origin, purpose of visit, age, gender, length of stay, seasonal patterns, main destinations.

**Time series since:** 1945 (with earlier data).

### International Visitor Survey (IVS)

Survey of 5200 departing international travellers conducted at the three main outbound airports. Managed by the Ministry of Tourism, with data collected by a contractor. Statistics released quarterly.

**Key measures:** International visitor expenditure, activities, transport and accommodation used, itineraries, satisfaction.

**Time series since:** 1997

### Domestic Travel Survey (DTS)

Survey of 15,000 New Zealand households using a telephone interview methodology. Managed by the Ministry of Tourism, with data collected by a contractor. Statistics released quarterly.

**Key measures:** Domestic travel expenditure, activities undertaken, purpose of travel, transport and accommodation used, itineraries.

**Time series since:** 1999

### Commercial Accommodation Monitor (CAM)

Census collection of 4500 significant commercial accommodation providers in New Zealand. Conducted by Statistics New Zealand. Statistics released monthly.

**Key measures:** Guest nights, capacity, occupancy rates, origin of guests, accommodation types, regional and seasonal reporting.

**Time series since:** 1996

### Regional Visitor Monitor (RVM)

Sample of 7200 international and domestic travellers conducted in six New Zealand regions. Joint venture between Ministry of Tourism and the regions. Conducted by a research company. Released quarterly.

**Key measures:** Motivations, expectations, satisfaction, pre-planning and booking information, attitudes to environmental issues.

**Time series since:** 2005

### Tourism Satellite Account (TSA)

Official measure of the contribution of tourism to the New Zealand economy. Conducted by Statistics New Zealand and based on UNWTO recommended methodology. Released annually.

**Key measures:** Total expenditure, contribution to GDP (direct and indirect), employment, value-added tax revenue, export earnings.

**Time series since:** 1999

### New Zealand Tourism Forecasts

The Ministry's forecasting programme generates a seven year outlook of expected tourism demand for the New Zealand tourism industry. A number of methods used, including econometric and time series analysis, with expert tourism industry input. Released quarterly.

**Key measures:** International arrivals, nights and expenditure, breakdowns by market and purpose of visit. Domestic overnight and daytrips, outbound travel by New Zealand residents.

**Time series since:** First series released in 2000

International Conference of Tourism:

“Knowledge <sup>as</sup>  
value advantage  
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## Attachment 2: Tourism Flows Model

The Tourism Flows Model (TFM) is a map-based tool that is free to use on the Ministry of Tourism research website ([www.tourismresearch.govt.nz](http://www.tourismresearch.govt.nz)).

The purpose of the TFM is to represent the dynamics of tourism spatially throughout New Zealand, and to facilitate informed decision-making on where to invest and where to adopt proactive policy, planning and resource allocation practices.

The model itself allows users to study the movements of international and domestic travellers in New Zealand, to even quite fine regional levels, and can link to forecasts so that future constraints may be identified.

The model draws on data from the International Visitor Survey, the Domestic Travel Survey, Transit New Zealand road counts and the Ministry of Tourism's forecasting programme.

The TFM builds maps and tables can be produced to analyse:

- The flows of different types of tourists by road and air
- Changes in tourist flows over time (up to 7 years ahead)
- Tourism intensity (nights) in different destinations
- Tourist behaviour by destination (e.g. purpose, activities).

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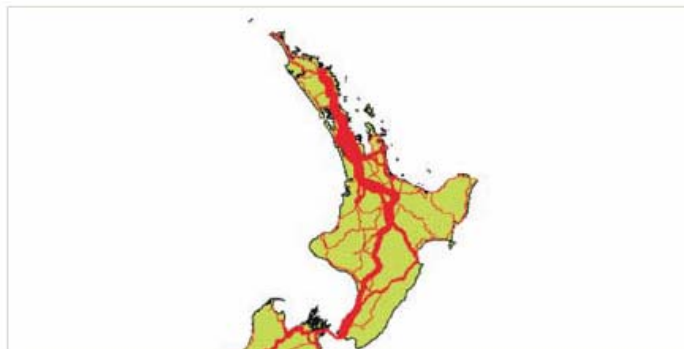


Figure 15 shows the travel pattern of UK visitors by road in the North Island. The thickness of the red lines show that many UK visitors leave the main routes, taking State Highway 1 to Northland, and exploring the Coromandel and Hawke's Bay areas.

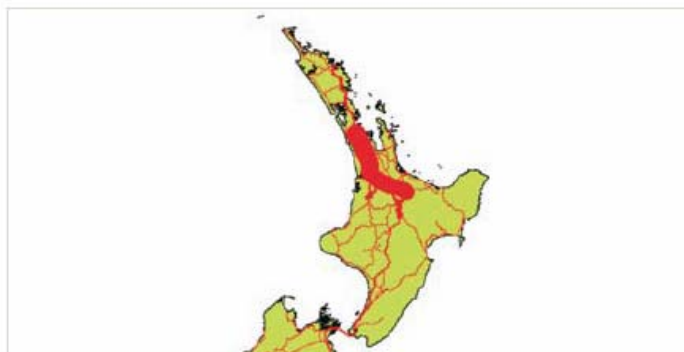


Figure 16 shows the travel pattern of Chinese visitors by road in the North Island. When compared to Figure 15 it is quite clear that Chinese are predominantly travelling between Auckland and Rotorua, and are less likely to explore the North Island further.

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