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# An OECD Review of Statistical Initiatives Measuring Tourism at Subnational Level

OECD

**OECD TOURISM PAPERS:**

**AN OECD REVIEW OF STATISTICAL INITIATIVES MEASURING TOURISM AT  
SUBNATIONAL LEVEL**

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The publication of this document has been authorised by Lamia Kamal Chaoui, Director, Centre for Entrepreneurship, SMEs and Local Development.

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The OECD is a multi-disciplinary inter-governmental organisation of 35 member countries which engages in its work an increasing number of non-members from all regions of the world. The Organisation's core mission today is to help governments work together towards a stronger, cleaner, fairer global economy. Through its network of 250 specialised committees and working groups, the OECD provides a setting where governments compare policy experiences, seek answers to common problems, identify good practice, and co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission takes part in the work of the OECD.

## **ABOUT THE TOURISM COMMITTEE**

This policy paper was prepared by the OECD Centre for Entrepreneurship, SMEs and Local Development, as part of the Tourism Committee's Programme of Work. The Tourism Committee, created in 1948, acts as the OECD forum for exchange, and for monitoring policies and structural changes affecting the development of domestic and international tourism.

Addressing the major challenges faced by the tourism industry, and maximising tourism's full economic potential, requires an integrated and multi-faceted approach to tourism policy development across many government levels and departments. In this environment, OECD members see considerable benefit in co-operating to address economic, sustainability and employment issues, and promote tourism policy performance and evaluation, innovation and liberalisation of tourism. A closer co-operation with major emerging economies is also seen as being critical to achieving a strong impact with this work.

The website of the Tourism Committee [www.oecd.org/cfe/tourism/](http://www.oecd.org/cfe/tourism/) provides detailed information about the OECD activities on Tourism.

## **ACKNOWLEDGEMENTS**

Alain Dupeyras, Head of Tourism, OECD, drafted and coordinated this report.

The report benefited from significant contributions from 11 OECD countries: Australia, Austria, Canada, Denmark, Finland, France, Ireland, New Zealand, Spain, Switzerland and the United Kingdom.

Statistical Institutes, National Tourism Administrations, National Tourism Organisations and other regional organisations worked closely with the OECD Secretariat (Alain Dupeyras, and Laetitia Reille) to identify the statistical initiatives to measure tourism at sub-national level, and to accurately present the methodologies, good practices and an illustration of the key results.

The report has also benefited from significant contributions, feedback and guidance from policy makers and experts from both OECD countries and non-member economies to help accurately present current policies and good practices.

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## Overview

Regions and cities play a growing role in tourism development and policy design. The economy-wide effects of tourism are significant and vary a lot from one territory to another (e.g. urban, rural, coastal or mountainous areas) in terms of number of visitors, type of tourism, seasonality patterns, revenues and added value per visitor or jobs generated.

A main challenge for countries is to develop at sub-national level a system of information and statistics on tourism, producing robust and timely data with a good level of disaggregation, and comparable data among regions and with national data. Much has been done in the past 20 years to improve the economic measurement of tourism at national level (e.g. with the Tourism Satellite Account), but rather little at sub-national level.

The sub-national level can be represented by a region, a city, or another type of “tourism destination”. The “tourism destination” level is very significant from a tourism perspective – the destination is the geographical area which is chosen by the visitor due to its mix of attractions, accommodation, catering and entertainment/activities – but often difficult to capture in terms of statistical measurement as it does not necessarily match with the administrative level for which the data are usually available.

The main objective of this review is to create awareness and an improved understanding of the wide-ranging impacts of tourism at the regional and local levels, and support a better measurement of the various impacts of tourism at sub-national level by the sharing of good and innovative country statistical initiatives. The review will contribute to the development of reliable data and analysis at regional and local levels for business and policy decision making.

The review presents statistical initiatives for Australia, Austria, Canada, Denmark, Finland, France, Ireland, New Zealand, Spain, Switzerland and the United Kingdom. Most of these initiatives are led by the national statistical offices and/or national tourism agencies. A few ones result from a partnership between the public and the private sectors. The initiatives focus on a wide range of issues such as total economic impact of tourism; direct economic impacts of tourism; tourism-related employment; enterprise demographics; tourism spending/revenues and high yield visitors, data visualization; regional competitiveness; and sustainability.

At country level, there is obviously a lot of knowledge and experience on assessing the impact of tourism in regions, cities and other destinations, but this knowledge remains very disparate. Work undertaken at sub-national level on tourism statistics covers a wide range of issues: inbound tourism visitor surveys and revenues, business surveys (business barometers and surveys, accommodation stock, occupancy rates), visits to attractions and events, regional/local tourism indicators, economic impact studies, investment related studies, regional tourism satellite accounts, or employment. This tourism specific information is usually supported by general indicators focusing on demographic, GDP, labour force, environmental, land cover or innovation issues.

International work and discussion on the subject is moving forward, notably with the work conducted by the World Tourism Organization which published a set of guidelines to design a regional tourism information system in 2012, and an issues paper on the Regional Tourism Satellite Account in 2013. The objective of the OECD review is not to develop a new international methodology.

Tourism data at sub-national level rarely allows comparisons among regions and with national data. The information is often weakly disaggregated, is not always analysed and shared effectively and

is not necessarily statistically valid. The evolution of methods and the production of data to estimate tourism at sub-national level continue to be hindered by weaknesses in the statistical base, by lack of capacity, and by lack of funding supporting tourism statistics development.

Robust, tourism policy-relevant information is lacking, undermining a good understanding of the local context. Where good information and data is accessible, this can provide an effective tool for galvanising local action, for reinforcing the performance of policies and programmes, or for driving investment and development projects. Agencies responsible for the development of tourism at sub-national level are therefore more and more willing to play an active role on measurement issues.

There are numerous challenges to effective qualitative and quantitative information on tourism at the sub-national level, which must be addressed:

- strengthen governance for the development of tourism statistics to avoid problems of overlapping and coherence, engage all players, and secure appropriate funding;
- define a common perspective regarding the statistical information needs, in partnership with the main industry players, taking both a horizontal and vertical perspective;
- ensure that institutional and human capacity for the development of tourism statistics is available and durable over time;
- determinate the boundaries of the territory to be observed, taking into account the design and limits of the broader statistical system.

OECD work underlines the key role of the central government in engaging all stakeholders horizontally and vertically in a “whole-of-government” approach, including on measurement issues.

The Tourism Satellite Account (TSA) can serve as a solid conceptual basis to support the measurement of tourism at regional level, with tools such as Regional Tourism Satellite Accounts (RTSA). In recent years, many countries including Australia (multiregional), Austria (Upper Austria, Lower Austria, and Vienna), Belgium (Flanders and Walloon regions), Canada (multiregional), Denmark (multiregional), India (States Madhya Pradesh and Kerala), Finland (multiregional), France (La Réunion), Japan, Norway (multiregional), Spain (Andalusia, Canaries, Castile and Leon, Basque Country, Community of Madrid), United Kingdom (Wales) and the United States (Florida and Louisiana) have developed RTSA or close adaptations.

The RTSA provides a solid evidence base for tourism policy making, but there are many practical limitations to its development at sub-national level:

- Regional agencies should have the resources and the statistical capacities to drive RTSA development – this rarely exists.
- The institutional will is required to build the comprehensive statistical base, and to construct a data-intensive commodity-by-industry matrix.
- The quality of tourism statistical data available at the regional level is often insufficient - it is therefore very difficult to adapt the TSA fully at regional level.
- The developmental, practical and costs implications are important. Its development requires significant work, even when a well-developed system of regional accounts exists.

- The RTSA does not necessarily provide what policy makers want in terms of tools for impact analysis on tourism:
  - The RTSA cannot show which are the visitors that have the highest levels of value added per trip.
  - The RTSA may be of limited use to estimate the indirect effects of tourism.
  - The RTSA provides limited attention to estimate tourism-related employment.

For these reasons, the RTSA remain often an irregular project, and a one-off exercise. Only a few countries have it as an ongoing project. Many countries and regions are looking for simpler models to estimate the economic impacts of tourism, using in some cases the RTSA as a base tool.

Most statistical initiatives presented underline the complexity of measuring tourism, especially at the regional and local levels, and the difficulty therefore to find the appropriate methodology that will on the one hand deliver robust and timely data and on the other hand be manageable over time and at reasonable cost.

A few lessons can be drawn from the statistical initiatives presented:

- Large samples and long-term time series are a unique way to deliver robust regional data (e.g. Australia local government area tourism profile builds on major surveys).
- Building on large existing databases reduces the cost of compiling the data to a marginal level (e.g. Ireland tourism enterprise analysis builds on business demography statistics).
- There is a lot to be gained from optimising the information from all data sources available at regional level (e.g. France measurement of tourism employment and wealth at local level, United Kingdom tourism intelligence at regional level) and to build more on private data sources and methodologies (e.g. Benchmarking programme for Swiss tourism destinations).
- Ad-hoc methods uniquely based on new surveys are more complex to manage over time, more costly and tend to produce less robust figures.
- New technologies offer huge potential to disseminate statistics in a more interactive and visual way, thus better serving the wide diversity of users at regional level (e.g. Austria interactive maps for regional tourism, New Zealand regional tourism indicators, Spain measuring tourism sustainability at regional level).
- Some initiatives require a major statistical effort, and are difficult to sustain over time given their complexity (multiple sources, high level of disaggregation), their cost, and changes in technical capacity over time.
- Big data is certainly a new avenue being explored by several countries (e.g. New Zealand regional tourism indicators).
- Where based on robust data and reliable methodological assumptions, economic impact models provide a flexible and open way of producing statistics, in particular to measure the total economic impact of tourism on the regional economy, or the impact of specific events on regional tourism (e.g. Canada Ontario Tourism Regional Economic Impact Model).

- The bottom-up approach and the possibilities to make local reports on tourism are highly appreciated by policy-makers, tourism stakeholders and other users (e.g. Canada Ontario Tourism Regional Economic Impact Model, Denmark Regional Tourism Satellite Accounts).
- High quality visitor monitoring at local level, especially in protected areas, is essential to understand the positive and negative impacts and adjust policies and further investment (e.g. Finland measuring the benefits of recreation and tourism in protected areas).
- Many of the statistical initiatives presented in this report underline the importance of cooperation between research and practice, between policy and statistical organisations, and with industry stakeholders.

Most countries face the same needs and challenges when measuring tourism at the sub-national level. Many of the statistical initiatives presented in this review could be transferable to other countries. Basic data sources exist in most OECD countries where reasonably developed statistical systems exist, making these approaches often transferable. For some of the statistical initiatives presented, there exist also an opportunity to develop international comparable statistics.

The reader is strongly encouraged to complement the reading of this report by accessing more detailed methodological, analytical and visual information which is available on internet and/or by contacting the lead agencies involved.

## Australia – Developing local government area tourism profiles

### *Description and rationale*

Tourism Research Australia (TRA) is the lead agency for this project.

TRA produces a wide range of tourism research information at the national, state/territory and regional level. TRA has developed the Local Government Area Profiles (LGA's) to provide the tourism industry and local governments with a profile of the area. The profiles can be used by researchers, planners and policy makers and developers, investors and local businesses. The profiles provide a comprehensive snapshot on tourism activity in the area. Data are gathered from two primary surveys: the International Visitor Survey (IVS) and the National Visitor Survey (NVS). The profiles also include data from the Australia Bureau of Statistics (ABS) on population estimates and tourism businesses from the ABS count of Australian Businesses. The ABS content will increase in the next publishing round as it becomes available through a Geographic Information System (GIS) data matching process. The amount of ABS content will increase in future as it becomes available by matching geographical boundaries.

Complementing these profiles are State Tourism Satellite Accounts which are compiled in close collaboration with the ABS, highlight the economic importance of tourism to the states and territories of Australia (see [http://www.tra.gov.au/research/State-Tourism-Satellite-Accounts\\_2014-15.html](http://www.tra.gov.au/research/State-Tourism-Satellite-Accounts_2014-15.html)). Key measures included in these reports are tourism consumption (both direct and indirect), tourism's value to the economy as measured by Gross State Product, and Gross Value Added and direct and indirect employment related to tourism. In addition to this some states have commissioned their own Satellite Accounts to provide economic indicators for tourism regions within their jurisdiction. As different providers are involved, these reports may be compiled using differing methodologies. Over the longer term the goal is for a more consistent approach to the preparation of these reports (see for example <http://tra.gov.au/research/Queensland-regional-tourism-satellite-account.html>).

The Local Government Area Profiles provide an overview of international and domestic travel activity, tourism businesses and the local government area population. It also provides measurement for visitors, nights and most importantly spend. The tables draw together important aspects of travel to an area, for example purpose of visit and accommodation used, and characteristics of visitors (e.g. travel party types).

### *Methodology*

Measuring tourism economic activity at the sub national or regional level has been a focus of TRA. In data collection, TRA conducts two major travel surveys, which in terms of the *type* of information collected, are similar to many other travel surveys conducted around the world, but the scale of the TRA surveys is larger than most, 40 000 visitors for the International Visitor Survey (IVS) and 120 000 residents for the National Visitor Survey (NVS). TRA has recently introduced a dual-frame landline and mobile sample for the NVS in 2014. The ability of the TRA surveys to deliver robust sub-national/state estimates can be largely attributed to two factors:

- The commitment to fund large sample sizes enables reliable regional statistics to be generated for each of the eight Australian states and territories, and for some of the more important destination regions and local government areas within Australia.
- The longevity of these two surveys has enabled the methods used to analyse and model the local area economic data to be refined and stabilised.

- Robust sample design and access to relevant high quality sampling and benchmarking information.

Measurement and reporting on a non-standard geography such as local government areas is less complex as TRA store the geographic coordinates of locations visited within the survey data collection.

All travel data are sourced from TRA's NVS and IVS. Data for each local government area are examined to determine whether there is an adequate sample size and reasonable relative standard error rate (from the IVS and NVS) to produce a robust tourism profile for each LGA. Data are combined from a four year period and published as an annual average for the profile. This both increases sample size and reduces relative standard error. Those LGA's where little data is robust enough for practical use are not published. Estimates that are unreliable in published reports are not provided and cells are marked with an 'NP'. LGA profiles have been prepared for the period 2011-14. The reports are updated annually.

The profiles present data for both the demand and supply sides of tourism in Australia's local government areas across each of the states and territories. It also provides population estimates and tourism business counts from the Australian Bureau of Statistics.

Demand side data includes:

- Summary of international and domestic visitors, nights and expenditure;
- Domestic overnight and international visitor profiles, including data for:
  - Top three international markets,
  - Purpose of visit,
  - Average length of stay,
  - Top accommodation types used,
  - Average spend per night in commercial accommodation,
  - Travel party types of visitors,
  - National and state profiles for comparison,
- Modelled expenditure estimates for accommodation and average spend per night and per trip for domestic day, domestic overnight and international visitors, where publishable.

Supply side data includes:

- Tourism businesses summary.

The Local Government Area profiles use expenditure estimates from TRA's regional expenditure modelling process for international, domestic overnight and domestic day visitors.

Domestic overnight and day expenditure estimates are derived in three steps:

- Home expenditure – allocated directly to the home tourism region.
- Long distance fare expenditure – split evenly between the home tourism region and destination tourism region.
- Itemised destination expenditure – distributed using the proportion of nights spent in each tourism region for overnight visitors and the proportion of visits for day visitors.

International expenditure estimates are obtained by distributing accommodation, food and beverages (AFB), non-AFB and package expenditure using the proportion of nights spent in each tourism region.

In parallel with making the state tourism expenditure survey data available to the public for further research, TRA has augmented these survey data to estimate state Tourism Satellite Account (TSA) as well as building in-house modelling capacity to carry out tourism economic impact analysis. Essentially, TRA has developed two models, one for state TSAs and a state tourism CGE model.

### **Key results**

Tables extracted from the Coffs Harbour local government area profile of New South Wales are presented as examples. Table 1 provides a summary of the key measurable for visitation (domestic and international) to the LGA.

**Table 1. Key tourism metrics for Coffs Harbour, New South Wales, Australia**

	International	Domestic		Total
		Overnight	Day	
Visitors ('000)	66	725	768	1 559
Nights ('000)	421	2 375	..	2 796
Average stay (nights)	6	3	..	4
Spend (million AUD)	22	377	120	519
Average spend per trip (AUD)	340	520	144	333
Average spend per night (AUD)	53	159	..	143
Average spend in commercial accommodation per night (AUD)	60	179	..	164

Source: Coffs Harbour local government area, Tourism profile of New South Wales, Australia.

Results are also broken down for a number of characteristics including purpose of travel, travel party type and accommodation. Accommodation also notes backpacker travel for the international market (Table 2).

**Table 2. Tourism statistics for Coffs Harbour, New South Wales, Australia**

	International	Domestic		Total
		Overnight	Day	
Reason (visitors '000)				
Holiday	57	352	416	825
Visiting friends or relatives	6	230	101	337
Business	..	97	..	..
Other	2	48	177	227
Travel party type (visitors '000)				
Unaccompanied	31	116	..	147
Couple	19	237	..	256
Family group	4	199	..	203
Friends/relatives travelling together	11	138	..	149
Accommodation (nights '000)				
Hotel or similar	45	766	..	811
Home of friend or relative	122	666	..	788
Commercial camping/caravan park	34	445	..	479
Backpacker	73	..	..	..
Other	147	492	..	639

Source: Coffs Harbour local government area, Tourism profile of New South Wales, Australia.

### ***Moving forward the approach adopted***

The project will be fully automated and available through interactive maps on the TRA website. The project will encompass additional third party data drawn into the project using GIS software. The LGA database will be built into a fully interactive cross tabulation software allowing for easier manipulation of the data for heavy users rather than static reports.

### ***Lessons taken from the approach adopted***

The Local Government Area profile estimates of visitor number and nights are based on information obtained from the National and International Visitor Surveys – a sample of visitors coming to or travelling within Australia. As with all surveys, the estimates are subject to sampling variability. This means the survey results may vary from the results that would have been produced if all visitors had been interviewed in a census. The data in these collections is considered robust due to the targeted sample design, large sample attainment and fit for purpose approach to the survey methodology which allows for the control of definitions and variables related to tourism.

A basic assumption is that the bigger the sample (i.e. the more visitors that were interviewed) the more reliable the result (assuming robust survey design). Conversely, results based on small sample sizes are less reliable. This means that smaller estimates, especially at local area levels, are less reliable than the larger estimates at State level. Combining the estimates for a number of years and working with average figures (profiling) is often a better way of understanding visitation to a local area in this situation.

Local Government Area tourism profile statistics should be used in conjunction with other information sources where possible. TRA will endeavour to add further information to the reports in the coming years.

***Relevance to other countries and transferability***

Other countries face the same challenges with measuring tourism at the sub-national level; this approach is transferrable across market.

***For more information***

Contact – Tourism Research Australia. [tourism.research@tra.gov.au](mailto:tourism.research@tra.gov.au).

Tourism Research Australia (2016)

[http://tra.gov.au/Tourism\\_in\\_Local\\_Government\\_Areas\\_2016/LGA\\_Profiles/index.html](http://tra.gov.au/Tourism_in_Local_Government_Areas_2016/LGA_Profiles/index.html)



## **Austria – Visualising regional tourism data through interactive maps**

### ***Description and rationale***

Statistics Austria is the lead agency for this project.

The demand for Geographic Information Systems and for a better presentation and visualisation of statistical data at regional/local level is increasing. The introduction and provision of such systems is now highly recommended by the statistical community. Statistics Austria has developed interactive maps (i.MAP) for thematic areas (population, education, agriculture and forestry, tourism and National Accounts). Data can be visualised on the basis of regional, municipal and district maps. The interactive maps can also be embedded in users' own websites.

The main objectives of this initiative are to:

- provide the possibility for creating maps according to the user's requirements;
- analyse data by different variables/indicators (e.g. quality, bed occupancy) at a regionally disaggregated level;
- provide a basis for tourism planning and for benchmarking between the regions;
- identify market shares and to visualise market growth by countries of origin;
- indicate the tourism intensity by combining tourism data with population data.

Since 2011 Statistics Austria has been providing i.MAPs free of charge on the website for interested users. The regions and municipalities have a benchmark tool which provides a visual breakdown of the variables mainly derived from accommodation statistics. i.MAPs enable the users to compare the structures of tourism related variables on a detailed regional level.

### ***Methodology***

For accommodation statistics, Statistics Austria is cooperating closely with the municipalities. The accommodation data relate to nights spent and to capacity of tourism establishments (covering municipalities reporting more than 1 000 nights spent per year which represents about two-thirds of the total). Monthly data on tourist arrivals and overnight stays are reported by type of accommodation and country of origin. Statistics for accommodation capacity are conducted once a year. The results cover 67 000 commercial and private accommodation establishments. The visualisation of the data can be done for the following elements:

- 1 559 reporting municipalities;
- About 120 tourism destinations;
- 19 types of accommodation;
- About 70 countries of origin (including Austrian provinces and seven regions of Germany);
- by month, winter- and/or summer season and by calendar year.

The methodology defines several indicators (Figure 1). The interactive maps cover the winter or the summer seasons.

**Figure 1. Indicators for data visualization on tourism in Austria**

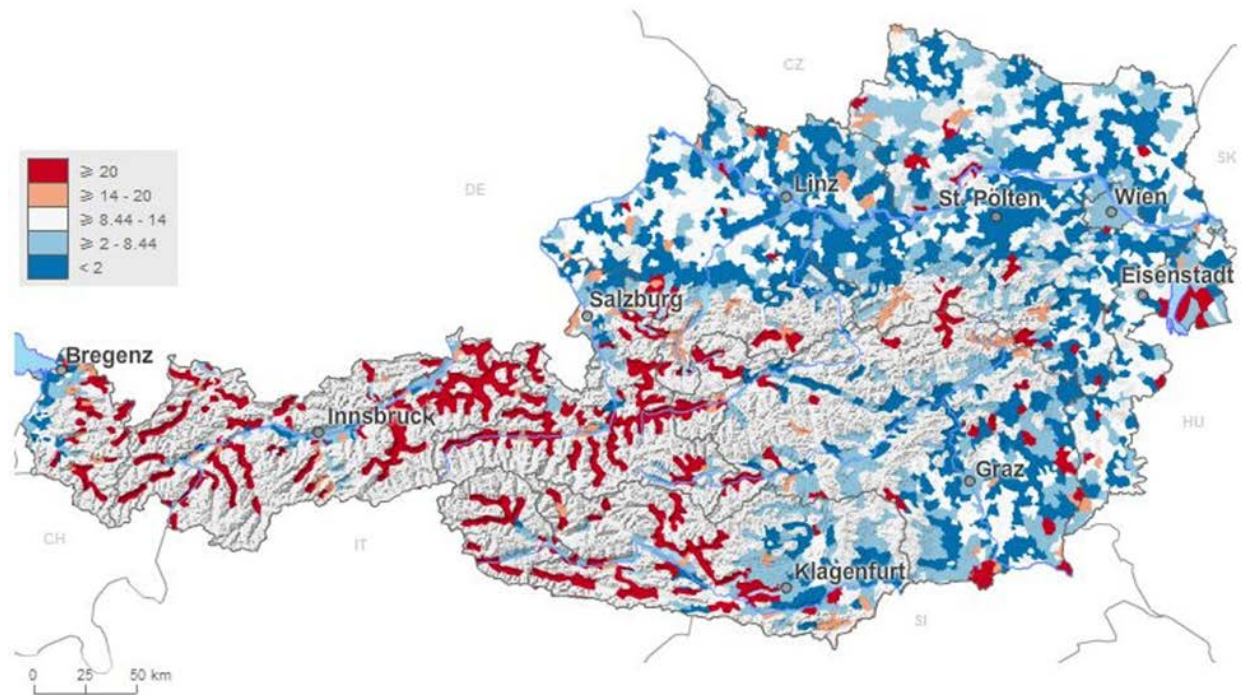
Indicator / Filter	What information can we get?
Arrivals / Period and Country of Origin	The indicator shows the origin of the visitors (domestic or inbound).
Overnights / Period and Country of Origin	The indicator shows the origin of the visitors (domestic or inbound).
Average length of stay / Period and Country of Origin	Average length of stay is characterising different motivations of tourists, such as business or health. In particular city destinations show different lengths of stay compared to rural areas, as well as summer and winter destinations.
Market share/ Period and Country of Origin	The indicator shows the absolute share in overnights of a destination compared to all other Austrian destinations.
Average Growth / Period and Country of Origin	The indicator shows the average growth rate in overnights of specific countries of origin within a destination over the last 5 periods (a period could be a month, a quarter, a season, a year or even a decade).
Share of 4-star and 5 hotels / Period	The indicator which can be seen as a quality indicator shows the share in overnights of 4- and 5-star hotels compared to all overnights within a destination.
Tourism intensity / Period	The indicator shows the overnights of tourists per inhabitant in a period.
Net occupancy rate of bed places / Period	Compares the destinations according to their occupancy rate.

Source: Statistics Austria.

### **Key results**

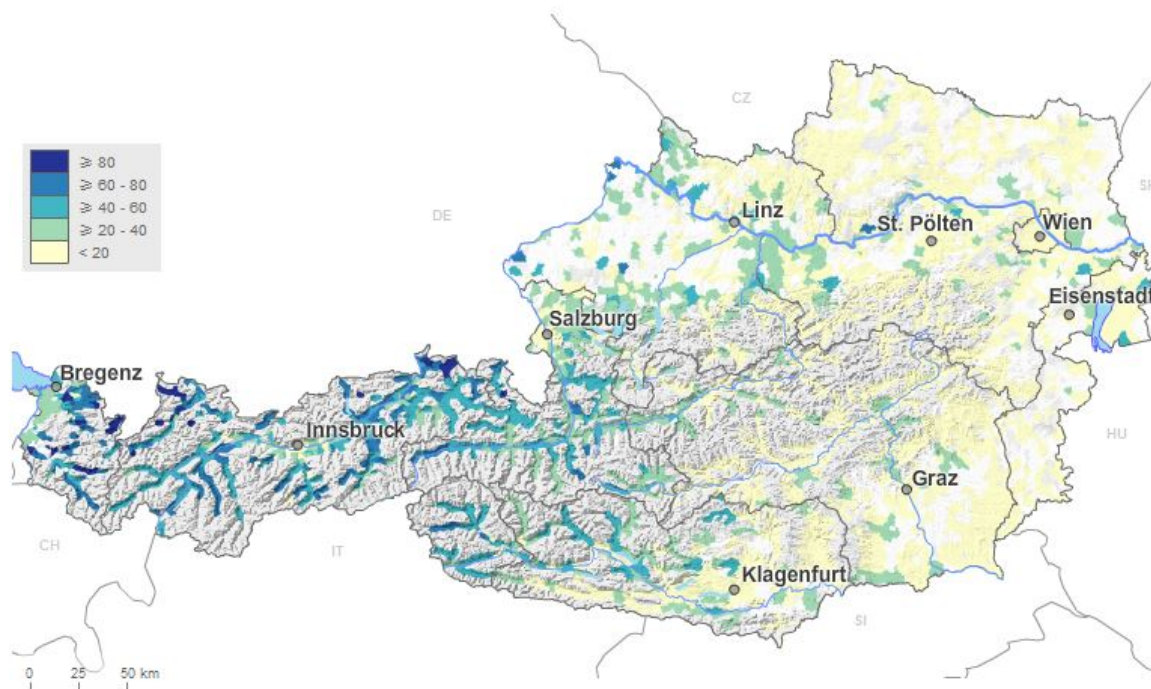
Data on arrivals and nights spent are available at municipality level for 70 countries of origin, by type of accommodation (commercial and private) and by month, season and year since 1972. The use of interactive maps can provide many different analytical options depending what you are looking for. For example, analysis may provide information on domestic tourist's regions of preference, on the local tourism intensity or on the market share of overnights in the luxury segment. Figure 2 shows the tourism intensity in winter 2014-15. The blue areas show those municipalities with rather low tourism intensity, the red areas show high intensities.

Figure 2. Tourism intensity in Austrian municipalities in winter 2014-15



Source: Statistics Austria, [http://www.statistik.at/web\\_en/publications\\_services/interactive\\_maps/index.html](http://www.statistik.at/web_en/publications_services/interactive_maps/index.html)

The regions are tourism destinations which represent a homogenous area of tourism supply (e.g. lake areas, mountain regions, wellness and soft tourism regions, cities). The interactive maps allow the aggregation of municipalities to larger tourism destinations. The T-Mona guest inquiry data provide information on travel habits of resident and non-resident tourists. By using a different indicator and filter, than those used in the previous figure, Figure 4 provides information about the importance of the German market for the different tourism regions expressed by the share of arrivals of German guests related to overall arrivals by region. The darker the color of the region the more important is the German market for the destination. It can be seen that especially the western and south-western regions are highly dependent on tourists from Germany.

**Figure 3. Arrivals of German tourists by tourism regions in winter 2014-15 in Austria**

Source: Statistics Austria, [http://www.statistik.at/web\\_en/publications\\_services/interactive\\_maps/index.html](http://www.statistik.at/web_en/publications_services/interactive_maps/index.html)

### ***Moving forward the approach adopted***

Statistics Austria will continue to develop data visualization through i.maps. The main aim is to keep up visualizing inland tourism and international travel on a detailed geographical level and to simultaneously try to integrate other spatial information. Statistics Austria is working to introduce new indicators and filters, to integrate non-touristic variables such as agriculture, energy or environment statistics, and to enlarge the i.map system by using other tourism and travel statistics (e.g. travel of payments balance data).

### ***Lessons taken from the approach adopted***

The structural information delivered by i.MAPs allows decision makers in the tourism industry to analyse, to adopt and to set up marketing initiatives. It is a tool that can be used also to communicate the results of measures undertaken to attract tourists. Complementary information from other statistical areas such as demography, agriculture or environment could enrich the set of indicators as far as this information is available at local level.

### ***Relevance to other countries and transferability***

It is possible to transfer i.MAPs to other countries when the information on tourism supply and demand is available at regional level. The question of relevance should be linked to the users' needs in other countries. A better understanding of the performance of regions could be a subject of high political interest for many countries, especially when tourism policies are developed through a bottom up approach.

***For more information***

Contact – Statistics Austria

[http://www.statistik.at/web\\_en/publications\\_services/interactive\\_maps/index.html](http://www.statistik.at/web_en/publications_services/interactive_maps/index.html)

Eurostat Statistics Illustrated – <http://ec.europa.eu/eurostat/web/regions>

INSPIRE – Infrastructure for Spatial Information in the European Community –  
<http://inspire.jrc.ec.europa.eu/>.

OECD data portal – <http://data.oecd.org/>

United Nations Committee of experts on global geospatial information management –  
<http://ggim.un.org/>



## Canada – Measuring the economic impacts of tourism in regions

### *Description and rationale*

The Ontario Ministry of Tourism, Culture and Sport is the lead agency for this project.

The Ministry is providing the Tourism Regional Economic Impact Model (TREIM) on the web to make it easier for organisations and individuals working in, or interested about tourism to determine the economic impact of visitors' and businesses' spending in this area on the local and provincial economies.

The methodology was prepared by the Centre for Spatial Economics for the Tourism Research Branch of the Ontario Ministry of Tourism. The purpose of the model is to forecast the economic impact of tourism events and infrastructure development at the sub-provincial level in Ontario.

The current version of the TREIM has been in use since 2004. Since that time the TREIM's database has been maintained on an annual basis and some minor modifications and enhancements made to the original programs. An improved version was developed in 2008, and incorporates: i) enhanced tourism industry detail; ii) revised indirect tax methodology; iii) enhanced direct tax methodology; and iv) enhanced local government tax methodology.

### *Methodology*

The TREIM is a versatile tool capable of providing detailed economic impact analysis for various user-selected geographies. The TREIM can be used to distribute total direct tourist spending across different geographic territories. The TREIM can also be used to estimate the economic impact of specific tourism events or impacts on the supply side by tourism industry sector or type of capital project at various level of geography. Finally, the application can be used to review the impact at the provincial level of supply or demand side tourism sector activity.

The TREIM produces the following:

- Estimates of the Direct, Indirect and Induced impacts of tourism-related activities on Gross Domestic Product (GDP), Labour Income and Employment.
- Estimates of the Direct and Total impacts of tourism-related activities on Federal, Provincial and Municipal Tax Revenues.
- At its core, TREIM is a multi-region input-output model with 49 Census Divisions, 14 Census Metropolitan Areas / Census Agglomerations, 13 Travel Regions, and the entire province.

The economic impacts from each of these applications go beyond those of a standard open input/output model. The TREIM has the capability of being closed with respect to households and investment. This allows (i) the impact on economic activity of the additional income paid to households, as a result of tourism sector activity, to be captured and (ii) to reflect the impact of changes in economic activity on business investment. The TREIM produces direct, indirect and induced impacts so the user can chose to “turn on or off” the induced impacts. The TREIM is also able to generate estimates of the impact upon federal government revenue generated in Ontario as well as provincial and local government revenue based on tax rates set by the user.

A specificity of the TREIM is that it can be accessed directly online by users. The single-region version of the model can be used to estimate the impact of tourism-related events. TREIM will retain none of the information provided by the user. All information inputted by the user will be deleted at the end of the session.

The province-wide version of the model (not accessible online) is used by the Ministry of Tourism to estimate the economic impact of tourism spending across Ontario.

### **Key results**

Table 3 presents the Economic impact of tourism in Ontario in 2013.

**Table 3. The economic impact of tourism in Ontario, Canada, 2013**

	Tourism receipts	Visitor spending
	CAD	
Spending	28 541 059 260	22 743 721 719
Total impacts		
Gross Domestic Product (Value Added)	25 260 734 862	19 363 245 461
Employment (Jobs)	362 365	288 342
Labour Income	16 491 614 912	12 312 027 554
Government Tax Revenue	12 178 595 222	9 563 606 245
Provincial Tax Revenue	4 893 636 961	3 837 799 174
Municipal Tax Revenue	1 272 419 201	999 594 440
Federal Tax Revenue	6 012 539 060	4 670 493 208
Direct impacts		
Gross Domestic Product (Value Added)	12 517 112 641	9 563 606 245
Employment (Jobs)	221 806	180 515
Labour Income	8 304 356 995	6 018 446 251
Government Tax Revenue	6 526 144 934	5 136 877 984
Provincial Tax Revenue	2 899 231 912	2 307 644 463
Municipal Tax Revenue	689 329 391	551 587 554
Federal Tax Revenue	2 937 583 631	2 277 645 967

Source: Ministry of Tourism, Culture and Sports of Ontario, Canada Tourism Regional Economic Impact Model, Statistics Canada.

The model enables the user to define the geographical area where the activity takes place, the additional geographical area of impact, the impact year, the inclusion or not of induced impacts, and the inclusion or not of property taxes. Depending on the project, the user will also be asked to input data on visitor spending or on operating expenses or on investment. The user may choose among various options and investigate the economic impacts of i) visitors' spending; ii) the operations of a business; iii) an investment in a tourism facility; or iv) the activity of convention centres.

### **Lessons taken from the approach adopted**

The economic impact information is very critical for conveying the value of tourism to federal, provincial and local government decision makers.

The economic impacts from the TREIM are defensible. The methodology used to construct the model and the database is fully documented. While the model is intrinsically static and only provides comparative statics analysis, it provides the user with the ability to generate economic impact estimates for current, prior or future years.

***Relevance to other countries and transferability***

Economic impact models are commonly used at regional/local level by countries. They are particularly significant for an industry such as tourism where there is a need to measure not only the direct impacts but also the indirect and induced impacts, as well as other types of impacts (e.g. on tax revenues). Different methodologies are used around the world. They require robust data on regional input/output tables, as well as on international and domestic travel. To the extent these sources of data exist, such model is easily transferable to other countries.

***For more information***

Contacts – Ontario Ministry of Tourism and Recreation (tourism research and industry competitiveness) and The Centre for Spatial Economics

The Centre for Spatial Economics (2008) [The Ontario Tourism Regional Economic Impact Model \(TREIM\)](#)

To use the model: <http://www.tourism.gov.on.ca/english/research/treim/index.html>



## Denmark – Designing a regional tourism satellite account

### *Description and rationale*

VisitDenmark is the lead agency for this project.

VisitDenmark's main task is to market Denmark as a tourism destination. VisitDenmark also analyses international trends in tourism and measures the economic effects of tourism. Part of the public funds received by VisitDenmark has to be used for the latter purpose.

VisitDenmark and the Centre for Regional and Tourism Research (CRT) have worked with Regional Tourism Satellite Accounts (RTSA) for Denmark since 2004 with the first RTSA being released in 2006. The Danish RTSA contains information on tourism spending on products by 'origin of tourist' and type of tourism and total effects (direct, indirect and induced) on gross value added, employment and taxes by industry. The results can be broken down to a municipal level and the Danish RTSA thus functions as an important planning tool for all governmental levels when tourism strategies are formed and documentation is required. The resulting multipliers – understood as total effects in relation to tourism spending – are heavily used.

Since 2004, VisitDenmark has financed the development and improvements of the tourism module of CRT's regional inter-regional macroeconomic model for Denmark called SAM-K/LINE. The model makes it possible to estimate the economic effects of the tourism consumption and in the process the scope of tourism covered has expanded and now also includes 'non-commercial tourism'. The main parts of the SAM-K/LINE model are financed by the five Danish regions and VisitDenmark. The regions use the model for many things – especially labour market-related analysis.

Reports are published yearly with the main results and local destinations can order special reports for their geographical area.

### *Methodology*

The Danish RTSA is primarily constructed through a "bottom up" method, i.e. it is based on demand side data – namely accommodation statistics and tourism spending. Therefore data consists of "quantities" and "prices".

"Quantities" are statistics on bed nights and one-day visits. Accommodation statistics from commercial accommodation facilities are collected by Statistics Denmark. This is supplemented by estimates for bednights in commercial facilities not covered by Statistics Denmark and data on non-commercial tourism – domestic and inbound – collected in one-off surveys or from other sources and subsequently uses for some years.

"Prices" are daily spending by tourists. The main source is the "tourism survey" conducted every three years by VisitDenmark where guests in commercial accommodation facilities covered by Statistics Denmark are asked about their daily spending on different categories of goods and services. A total of 12 500 tourists are interviewed face-to-face in this process making it possible, in most cases, to calculate daily spending by accommodation, marked, purpose at NUTS 2, NUTS 3 or even municipal level. As for "quantities" one-off surveys cover spending pattern for non-commercial tourism.

The demand side tourism data is uploaded to the SAM-K/LINE model that combines national accounts data, input-output matrices, regional production data and register-data on persons and firms. The SAM-K/LINE model links the demand side data with supply-side data from the regionalised national accounts and calibrates the derived tourism economic effects. In the process the tourism consumption data is supplemented by tourism consumption on items not covered by the regular spending surveys. This is done by using national accounts data and other data sources – thus there is a certain top-down element to the Danish RTSA as well.

There are still some gaps in the Danish RTSA vis-à-vis the TSA methodology. The Danish RTSA has not yet included or compiled the effects of outbound tourism on the Danish economy and it still does not include some tourism specific products, e.g. tourism consumption on international flights. So currently the Danish RTSA is focusing on tourism consumption in Denmark.

Over time there have been changes and improvements in the data sources and estimation methods in the Danish RTSA. This means that the Danish RTSA results cannot be compared over time and it is only a structural tool. If the focus is tourism development over time in Denmark, data such as the development in the tourism-related NACE-industries and accommodation statistics are potential starting points for analysis.

### ***Key Results***

As mentioned in Tables 4 to 10 the results from the Danish RTSA are heavily used nationally and locally for political purposes and as input to tourism strategies. At the national level, tourists in Denmark spend DKK 87 billion of which 41% can be attributed to inbound tourism. The DKK 87 billion are more or less evenly distributed between commercial tourism (e.g. hotels and holiday homes) and non-commercial tourism (e.g. friends and family visits, one day tourism and spending while using own holiday houses).

The RTSA can also analyse tourism spending on specific products. Tourism in the Capital Region is dominated by hotels and thus not surprisingly a larger share of tourism spending is spent on the accommodation itself and on tourism products in general compared to other regions in Denmark where cheaper accommodation types are used and more people cook their own dinner while on camping or in holiday homes and thus buy food in retail and not restaurants and cafes.

Looking at derived effects at the national level the single most used result is the number of jobs created – 122 500 or roughly 1.4 job per million DKK spent by tourists. The equivalent multiplier for value added is 0.51 and for taxes 0.4. It is also possible to look at tourism products share of total supply for products nationally and locally. Variations between regions can amongst other things be explained by the general industrial structures in the regions and thus shed light on the relative importance of tourism in the regions. A similar exercise at municipal level shows that some municipalities are very reliant on tourism (up to 10% of total supply). The importance of tourism in terms of jobs is also possible to look into.

**Table 4. Tourism consumption by accommodation type, Denmark, 2014**

	Total		Inbound		Domestic	
	million DKK	%	million DKK	%	million DKK	%
Total	94 723	100	37 243	100	57 480	100
Commercial tourism	48 386	51	24 344	65	24 042	42
Hotel, Leisure	13 849	15	7 750	21	6 099	11
Hotel, Business	13 304	14	4 858	13	8 446	15
Holiday resorts	1 685	2	699	2	986	2
Camping	4 657	5	1 590	4	3 068	5
Hostels	933	1	325	1	607	1
Holiday homes	12 068	13	8 373	22	3 695	6
Marinas	521	1	181	0	339	1
Festivals	842	1	154	0	688	1
Farms	128	0	22	0	107	0
Cruise	400	0	393	1	7	0
Non-commercial tourism	46 337	49	12 899	35	33 438	58
Own holiday homes	6 519	7	0	0	6 519	11
Borrowed holiday homes	1 095	1	0	0	1 095	2
Family/friends	9 443	10	6 652	18	2 791	5
One-day, Leisure	17 020	18	6 247	17	10 773	19
One-day, Business	12 260	13	0	0	12 260	21

Source: VisitDenmark.

**Table 5. Tourism spending by product and region, Denmark, 2014**

	Tourism products	Retail	Other products	Total
		%		billion DKK
Capital Region	57	28	16	37 830
Central Denmark Region	52	26	22	16 495
North Denmark Region	42	36	22	10 995
Region Zealand	42	32	26	10 303
Region of Southern Denmark	51	28	21	19 100
Denmark	51	29	20	94 723

Source: VisitDenmark.

**Table 6. Tourism consumption, derived effects and multipliers, Denmark, 2014**

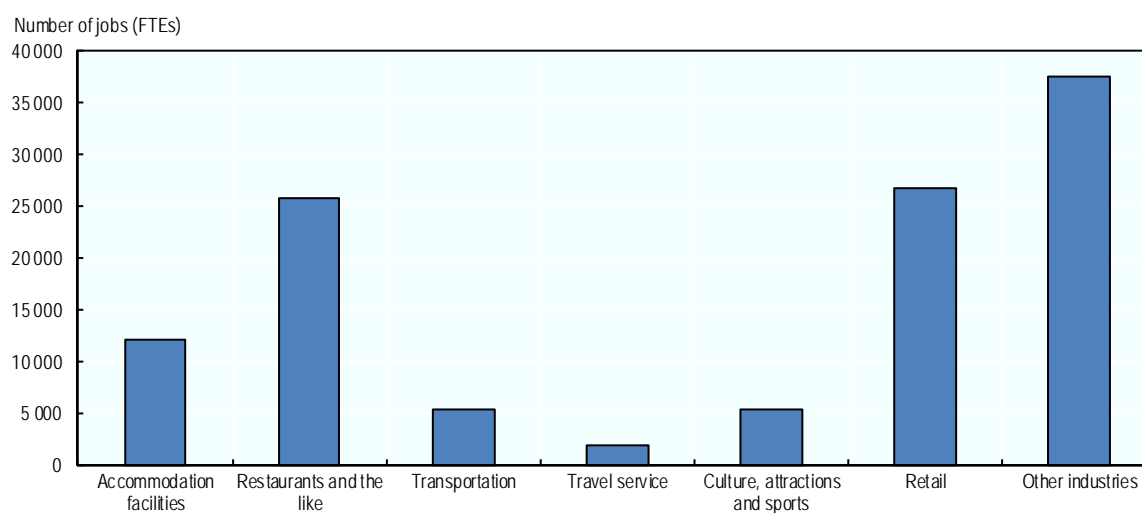
	Key figures	Effect of 1 million DKK tourism consumption	Multipliers
	billion DKK	DKK	
Tourism consumption	94.7	1 000 000	1
Value added - direct effect	29.0	305 985	0.31
Value added - total derived effects	55.1	582 183	0.58
Personal taxes	14.9	157 271	0.16
VAT, charges and corporate taxes	24.2	255 058	0.26
Taxes, total	39.1	412 329	0.41
Jobs (Full Time Equivalent)	114 900	1.21	

Source: VisitDenmark.

**Table 7. Tourism consumption share of total supply by region, Denmark, 2014**

	Tourism consumption	Total supply	Share
	million DKK		%
Capital Region	37 830	1 868 407	2.0
Central Denmark Region	16 495	1 035 099	1.6
North Denmark Region	10 995	441 761	2.5
Region Zealand	10 303	496 761	2.1
Region of Southern Denmark	19 100	960 264	2.0
Total	94 723	4 862 979	1.9

Source: VisitDenmark.

**Figure 4. Jobs created by tourism by industry, Denmark, 2014**

Source: VisitDenmark.

**Table 8. Tourism generated jobs, Denmark, 2014**

Full time equivalent

	Tourism industries	Retail industries	Other industries	Total
Capital Region	20 334	9 820	13 292	43 446
Central Denmark Region	8 823	4 411	6 902	20 136
North Denmark Region	5 833	3 898	4 910	14 641
Region Zealand	5 710	3 451	4 845	14 007
Region of Southern Denmark	9 844	5 202	7 625	22 671
Denmark	50 544	26 782	37 574	114 900

Source: VisitDenmark.

**Table 9. Total jobs, Denmark, 2014**

Full time equivalent

	Tourism industries	Retail industries	Other industries	Total
Region Hovedstaden	104 530	212 398	669 450	986 377
Region Midtjylland	43 760	189 851	394 165	627 776
Region Nordjylland	20 662	78 999	172 163	271 824
Region Sjælland	22 239	85 556	206 288	314 083
Region Syddanmark	41 675	172 276	345 448	559 398
Denmark	232 866	742 358	1 789 913	2 765 137

Source: VisitDenmark.

**Table 10. Share of tourism jobs by region, Denmark, 2014**

	Tourism industries	Retail industries	Other industries	Total
	%			
Region Hovedstaden	19	5	2	4
Region Midtjylland	20	2	2	3
Region Nordjylland	28	5	3	5
Region Sjælland	26	4	2	4
Region Syddanmark	24	3	2	4
Denmark	22	4	2	4

Source: VisitDenmark.

***Lessons taken from the approach adopted***

Despite its shortcomings the Danish RTSA is recognised as a valuable tool and has contributed to the increasing political focus on tourism that Denmark has experienced in recent years. The bottom up approach and the possibilities to make local structural reports on tourism are highly appreciated. The primary challenge relates to implementation and cost of the surveys and the macroeconomic model supporting the RTSA; this is especially the case during the initial phases. Moreover, the lack of comparable time series can be a practical problem and a frustration for local destinations who want to document the effects of new tourism initiatives and policies. Possible ways forward include digital consumer surveys on apps and webpages and big data in general which could bring all data in the Danish RTSA up to date and thus better reflect the realities at the very local level – at least when it comes to tourism spending.

***For more information***

Contact – VisitDenmark

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## Finland – Measuring the benefits of recreation and tourism in protected areas

### *Description and rationale*

Metsähallitus and Parks & Wildlife Finland is the lead agency for this project.

National parks as well as other protected areas provide multiple socio-economic benefits. Many of these benefits are intuitively understandable and people can and do experience them in person, but they mostly remain not measured or reported. Consequently, the benefits remain underappreciated by decision-makers and the wider public alike, and public funding to establish and maintain protected areas is regarded of low priority. This case describes the Finnish system developed for measuring and reporting the socio-economic benefits related to recreation and tourism in protected areas.

In Finland, Metsähallitus, Parks & Wildlife Finland is responsible for managing all national parks and other state owned protected areas with funds from the state budget. The demand for information on the socio-economic benefits of protected areas is obvious: in addition to monitoring the effectiveness of management for conserving biodiversity, many politicians, local decision-makers and funders are also requesting information on the economic impacts of protection. While all socioeconomic values related to protected areas cannot be assessed in monetary terms (eg cultural values), a certain fraction of the use-related values can be captured by estimating the economic impacts of people's visits to the parks, ie how the money spent by visitors is "streamed into" and accumulates in the local economy.

In addition to highlighting the benefits of public investment, understanding the economic impacts of visitor spending can also be used to increase general acceptance of national parks among stakeholders. It also forms a useful basis for planning area's socio-economic development, e.g. establishing new businesses in the area. Comparing economic benefits between different parks may also provide useful insights into certain success factors that can be replicated elsewhere.

In order to estimate the socio-economic benefits of national parks and other key state-owned protected areas in Finland, Parks & Wildlife Finland and the Finnish Forest Research Institute (Metla, now part of the Natural Resources Institute Finland) developed in 2009 a standardised, easy-to-use method for assessing the local, accumulative economic impacts of visits to parks on an annual basis (Huhtala et al. 2010). This method focuses on quantifying the economic benefits associated with nature-based recreation and tourism in Finnish national parks and other protected areas, including activities such as hiking, skiing, fishing and camping. The method builds on the US Money Generation Model 2 (MGM2, Stynes et al. 2000) developed for the United States National Park Service.

In 2010 the method was integrated into the national visitor information database (ASTA) of Parks & Wildlife Finland, originally developed to estimate the recreational demand in national parks and other protected and recreational areas. This integration now allows estimating and reporting visitor spending related benefits for each key protected area on an annual basis.

The basic requirement for estimating protected area visitors' local economic impacts is a comprehensive, standardised visitor monitoring system, including both visitor logs and surveys. When beginning to develop the economic impacts calculation model, Parks & Wildlife Finland had a similar system already in place (Kajala et al. 2007). This helped in keeping down the costs, i.e. being able to use visitor information already collected for other purposes. Even if establishing and maintaining such a comprehensive visitor monitoring and information system requires significant investment in time and resources, Parks & Wildlife Finland's experience is that this investment can generate high and diverse returns.

## ***Methodology***

The assessment model is adopted from the US Money Generation Model 2 (MGM2). The model combines information on three key variables: number of visits, visitors' spending, and a set of multipliers that reflect how visitor spending circulates and multiplies in the local economy. Data could be obtained from an existing comprehensive, standardised visitor monitoring system, which builds on both visitor logs and surveys, and a national visitor information database (ASTA) by Parks & Wildlife Finland.

The accuracy of spending and impact estimates depends largely on the input data, i.e. visitation numbers, visitor spending figures and multipliers describing the flow of money in the local economy. Therefore the basic requirement for estimating economic impacts of park visitation on a continuous basis on a national level is a comprehensive, standardized visitor monitoring data, including both visitor counting and visitor surveys. Parks & Wildlife Finland had such a monitoring system already in place, called visitor information database system (ASTA), which greatly helped in integrating a new visitor spending effects' calculation into it.

## ***Key results***

According to the statistics, in 2015 the Finnish national parks were visited around 2.6 million times. The estimated benefits of these visits to local economies ranged from less than EUR 0.1 million to EUR 36.5 million per park, generating an estimated 0–366 person-years of employment (full time equivalent). When summing up the benefits at national level, the local economic impacts of national park visitors' spending alone (altogether 39 areas) amounted to 141.4 million EUR and 1 400 person-years in 2015. Respective figures are available for other key state-owned protected areas as well (Metsähallitus 2016). The biggest local economic impacts can be seen in national parks located next to tourism centres where the visitors stay for a longer period and the supply of tourism services is larger.

The cost-benefit ratio of the Finnish national parks is good. The local economy benefits are on average ten times more than the public investments in the hiking services per year. For national parks located next to ski resorts, the average input-output ratio is still higher, i.e. 14 euros. Close to big cities and the Helsinki Metropolitan Area, the visitation impacts are primarily recreation and health benefits.

The protected areas' visitor spending effects were one of the key factors that convinced decision-makers a few years ago that the public investment in Finland's protected areas pays back manifold. In the end, planned budget cuts to park management were not implemented. Moreover, differences between the local economic impacts across national parks have alerted the regional and nature tourism enterprises, developers and administrators on the potential business opportunities related to protected areas. It has also become clear that investment in both management activities and private sector development is necessary in order to create significant incomes to the regions. In addition to highlighting the benefits of public investment, understanding the economic impacts of visitor spending can also be used to increase general acceptance of national parks among stakeholders.

## ***Moving forward the approach adopted***

Parks & Wildlife Finland keeps the methodology up-to-date, eg the multipliers used in the model were updated in 2014 (Vatanen and Kajala 2015). Parks & Wildlife Finland follows international methodological developments, especially within the United States National Park Service, from which the Finnish model was adopted. In the United States, the 2012 analysis marked a major revision to the NPS visitor spending effects analyses, with the development of the visitor spending effects (VSE) model which replaced the previous Money Generation Model 2 (MGM2). The VSE model measures

the annual economic effects of NPS visitor spending as it cycles through Park-level, state, NPS region, and national level economies (United States National Park Service 2016).

### *Lessons taken from the approach adopted*

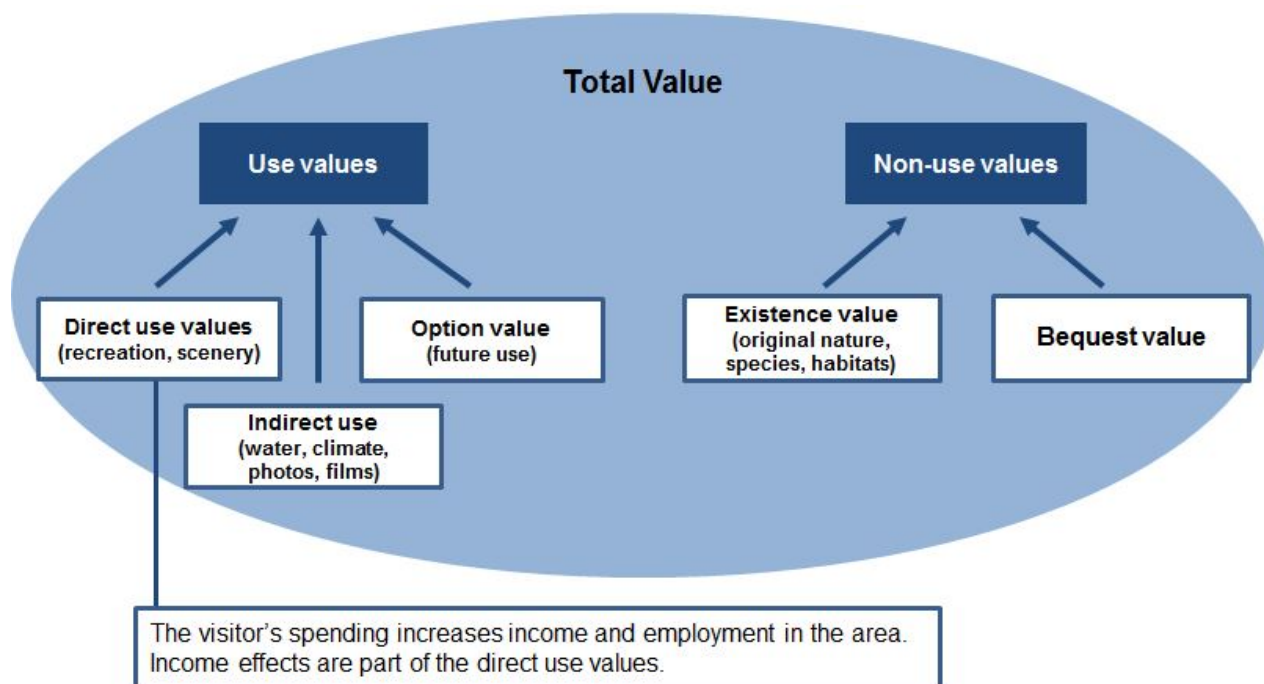
One of the key lessons learned in the context of the study has been the importance of cooperation between research and practice, i.e. between organisations like the Finnish Forest Research Institute Metla and Parks & Wildlife Finland. Combining theoretical and practical knowledge has provided useful insights into the method and significantly increased the level of confidence in the results.

Prior to the development process, a number of case studies on the local economic impacts of park visitation existed. However, case studies vary in methodology and are quite expensive to implement. Therefore, one of the main goals of Metla and Parks & Wildlife Finland was to ensure comparability of results between the areas and across time as well as the reliability and usability of the method in the long run. In the Finnish assessment, the comparability is now achieved by a nationally standardised data collection (via the ASTA database) and methodology. The results were also compared to previous studies to cross-check their reliability. The developed method is user friendly and free to use for everyone in the agency.

The process strengthened the assumption that an on-going and standardised visitor monitoring system is a prerequisite for continuous economic impact estimation of visitation to protected areas. This is relatively easy in Finland because all the national parks are managed by one government agency that has worked actively with visitor monitoring. Parks & Wildlife Finland has established a group of experts called SMART (Experts on Sustainability and Management of Recreation and Tourism) whose task is to advice and guide national parks and other key protected areas on issues related to visitor monitoring and to further develop the monitoring methods. This guidance is necessary in order to maintain high quality visitor monitoring, crucial to reach reliable economic impact results. On the other hand, it seems that using visitor monitoring data for economic impact estimation has increased the motivation to carry out visitor monitoring: in many national parks the importance of investments into a visitor monitoring system is now understood better than before. The investments into the visitor monitoring system pay themselves back manifold through the diversity of information obtained.

Finally, it is important to keep in mind that while the local economic impacts of recreation originating from park visitors' spending is important information that can have an impact on policy making, this method only describes and takes into consideration certain value types. In Finland, understanding and displaying the benefits associated with visitor spending has built the foundation making it easier to showcase all the other types of values associated with protected areas and recently Parks & Wildlife Finland has developed ways of measuring protected area visitors' perceived health and well-being benefits (Figure 5).

Figure 5. The total value of a national park, Finland



Source: Parks & Wildlife Finland.

### ***Relevance to other countries and transferability***

The methodology has been presented in various international conferences over the past seven years and many countries have expressed their interest in applying the same methodology. The basic methodology is universally applicable; the challenge so far has been in finding resources to obtain the systematic data that the model requires, i.e. amount of visitation, visitor spending data, visitor profiles and local economy multipliers for each protected area.

### ***For more information***

Contact – Metsähallitus, Parks & Wildlife Finland

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## France – Measuring tourism-related employment and wealth creation at the local level

### *Description and rationale*

The French National Institute for Statistics and Economic Studies (INSEE) is the lead agency for this project.

INSEE has developed a methodology for estimating tourism-related employment and wealth creation at the level of communes, and in particular:

- tourism employment by sector (groups of activities) or the level of tourist capacity;
- tourism employment broken down by average age, gender, socio-professional category, age, conditions of employment, gross and net salaries, and average working hours;
- trend in tourism employment between the reference year and last year for which data are available;
- wealth created by tourism activities in a given area, which can then be used to assess the economic weight of the tourism activities considered.

### *Methodology*

The methodology was revised in 2014. In particular, it is now more restrictive with regard to associated activities and a number of activities in which tourism is not the major explanatory factor in their seasonality have been eliminated.

### *Calculation of tourism employment*

The method is based on the concept of residential employment, which represents the number of jobs per activity required for the population usually present in a given area (excluding tourists). Estimated tourism employment corresponds to the jobs generated by visiting tourists, that is to say the jobs that can be directly attributed to the presence of tourists in a given area. Only jobs that are directly generated are taken into account. The tourism employment in a given area will be equal to the difference between total employment and the ratio of residential employment (except for 100% tourism activities for which all employment will be considered to be tourism-related). The method excludes most means of transport and travel agencies because although they are used to travel to a tourism location they do not constitute expenditure in the area. The data sources consist of the annual declarations of social data (DADS) for salaried employment and the central agency for social security bodies (ACOSS) for non-salaried employment.

Tourism employment is estimated as follows:

- 100% tourism activities are those which would not exist without the presence of tourism (for example accommodation). All employment in connection with such activities will be considered to be tourism-related.
- Tourism activities are those that which are dependent on the presence of tourists, but of which a share of employment is attributable to persons residing in the area (for example restaurants and bars). Employment in such activities during the low season, regardless of the tourism capacity of the area, concerns residents or persons present in the area solely for work

purposes. The average national per capita employment ratio, calculated for all residential and commercial areas at the time when activity is at its lowest, can therefore be used to calculate a theoretical residential employment ratio for each residential and commercial area. This figure is then subtracted from the total employment in the residential and commercial area to obtain tourism employment, which is then assigned to each commune according to a distribution key under the heading of 100% tourism employment in the commune.

- Activities that are not closely tourism-related are those which exist without the presence of tourists, but which may experience a temporary spurt as a result of the presence of tourists in the area, precisely because the area is a tourist destination. As outlined above, a theoretical level of residential employment is calculated, but in this case for each individual residential and commercial area in order to take account of the distinctive local characteristics of that area. This theoretical level of residential employment consists in the average total employment during the quietest months for each activity. Tourism employment will therefore consist solely in share of employment greater than this level of theoretical employment. A share of this employment is then assigned to each commune according to a distribution key under the head of 100% tourism employment in the commune.

A number of different variables were used to compile data on salaried tourism employment:

- average age and three age groups,
- gender (male, female),
- socio-professional category (managers, intermediate occupations, workers, employees, others),
- conditions of employment (full-time, part-time),
- average net hourly salary,
- average gross hourly salary.

Age and gender were the sole variables used for non-salaried jobs.

These characterising data provide both insight into and details of tourism employment, but are based on strong assumptions and should therefore be viewed with caution. They are based on the assumption that the tourism employment and total employment are structurally the same, and must therefore be used carefully.

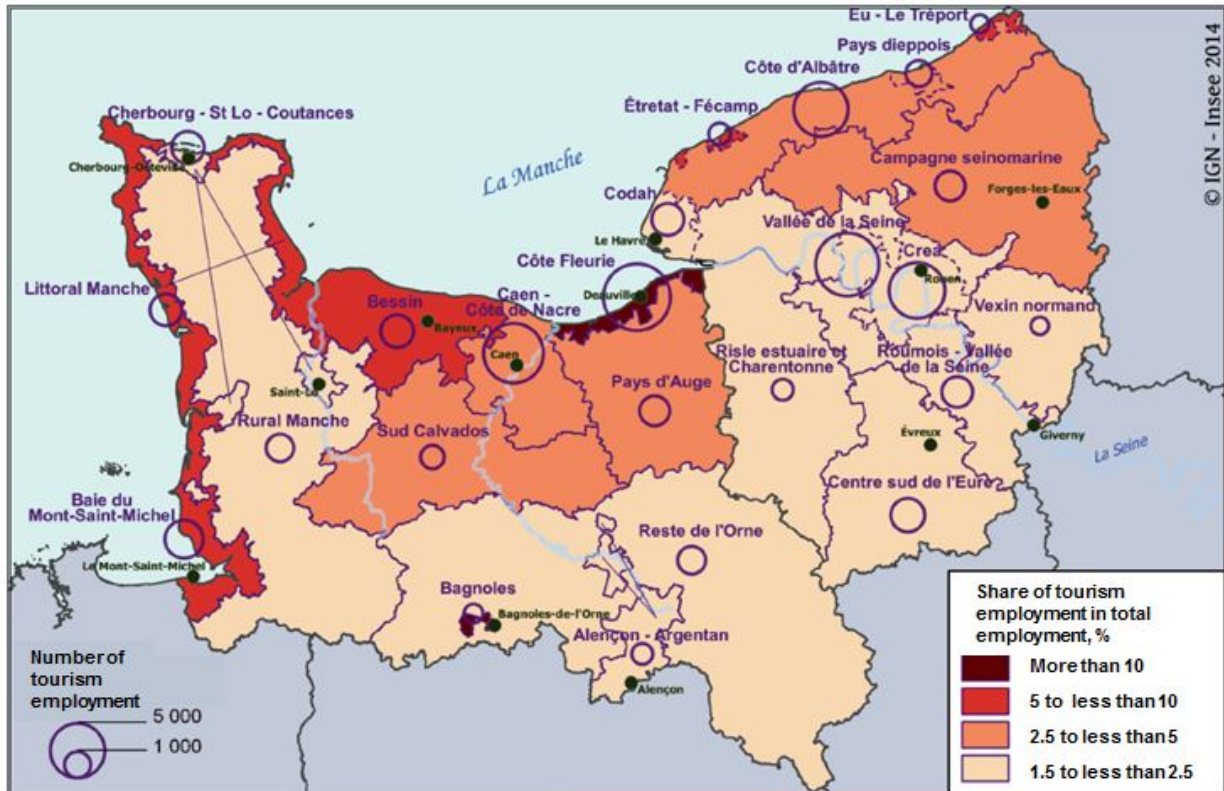
#### *Calculation of tourism-related wealth creation*

The method can also be used to calculate tourism-related wealth creation. Wealth creation is an economic concept used to assess the scale of economic activity in a given area. As we saw with employment, tourism-related wealth creation consists in the wealth created by tourists visiting that area. The concept of created wealth is derived from the value added of firms, and should be considered as a proxy for the weight of economic activity. Created wealth is not comparable to GDP. These data can be used, for example, to rank the weight of the main tourism activities in an area or to compare the “economic” weight of those activities to their weight in terms of employment. The source of these data is INSEE’s *Fichier Économique Enrichi*.

### Key results

The new methodology allows precise estimation of the zones with the highest share of tourism employment in the area (Figure 6 and table 11).

Figure 6. Coastal areas in Normandy clearly attract the highest number of tourists



Source: DADS 2011, Acoess 2011 ; traitements Insee,  
[http://www.insee.fr/fr/insee\\_regions/haute-normandie/themes/aval/aval14148/img/aval14148.pdf](http://www.insee.fr/fr/insee_regions/haute-normandie/themes/aval/aval14148/img/aval14148.pdf)

**Table 11. Number of tourism-related jobs by region, metropolitan France, 2011**

	Tourism employment related to local tourism	Tourism employment not related to local tourism	Total tourism employment	Share of total employment <sup>1</sup>
	000 jobs			%
Ile-de-France	261	133	395	7
Rhône-Alpes	119	28	147	5
Provence-Alpes-Côte d'Azur	116	24	140	7
Aquitaine	54	11	65	5
Bretagne	46	11	57	4
Languedoc-Roussillon	49	8	57	6
Pays de la Loire	41	12	53	4
Midi-Pyrénées	39	12	51	4
Nord-Pas-de-Calais	32	13	45	3
Alsace	25	9	34	4
Centre-Val de Loire	25	8	33	3
Lorraine	21	8	30	3
Bourgogne	20	9	28	4
Poitou-Charentes	24	4	28	4
Basse-Normandie	23	4	27	5
Picardie	17	7	24	4
Haute-Normandie	15	6	22	3
Auvergne	17	4	22	4
Champagne-Ardenne	12	5	17	3
Corse	12	2	14	11
Franche-Comté	11	3	14	3
Limousin	8	3	11	4
Metropolitan France	986	325	1 310	4

1. Excluding agriculture, civil service and individual employers.

Source: Insee, DADS 2011.

The method can also be used to determine the wealth created by local tourism (Table 12).

**Table 12. Breakdown of wealth created by local tourism area, France, 2011**

	Total employment <sup>1</sup>	Tourism employment	Share of tourism in total employment	Share of non-salaried jobs in tourism employment
	000 jobs		%	
Urban areas, <i>of which</i> :	15 943	529	3	12
Paris urban area	5 738	251	4	10
Major urban areas	2 825	101	4	13
Medium-sized urban areas	7 379	176	2	14
Coastal areas, <i>of which</i> :	2 532	194	8	17
Mediterranean coast	1 174	89	8	16
Atlantic coast in Brittany	862	70	8	18
Channel coast	400	24	6	15
Corsican coast	96	11	11	16
Ski resorts, <i>of which</i> :	207	64	31	27
Ski resorts at high altitude	160	57	36	28
Ski resorts at medium altitude	48	7	15	22
Mountain regions, <i>of which</i> :	6 340	199	3	23
High altitude mountains	1 022	44	4	20
Medium altitude mountains	1 637	55	3	21
Small urban areas	3 681	100	3	25

1. Excluding agriculture, civil service and individual employers.

Source: Insee, DADS 2011.

***Moving forward the approach adopted***

This method of estimation has recently been revised. Since 2014, several regions in France have started to use it (Haute-Normandie, Ile-de-France, Lorraine, Picardie). They are due to be followed by others, which in time will allow this methodology to be consolidated on the basis of the results obtained and analyses of estimates.

***Lessons taken from the approach adopted***

Data on tourism employment and the wealth created by tourism at the local level are of the very highest interest to local decision-makers. The methodology allows regions to be compared with one another and a relatively detailed classification to be made of the impact of tourism according to type of destination area (urban, coastal, ski resorts, mountain regions). It is a new tool to support the introduction of tourism policies at the local level and to gain a better insight into the seasonality of tourism employment at the local level.

***Relevance to other countries and transferability***

This method draws on highly detailed data sources relating to the nature of employment and qualifications, the beginning and end dates of pay periods, the number of salaried hours, conditions of employment (full-time, part-time), amount of salaries paid, etc. This information is supplemented by other data, in particular overnight stays in hotels as well as economic and financial information relating to establishments. This method could be transferred to a country with similar data at its disposal.

***For more information***

Contact – National Institute for Statistics and Economic Studies (Insee)

*Méthode d'estimation de l'emploi et de la richesse dégagée touristiques AT47*, INSEE, January 2014.

Insee Newsletter Haute-Normandie No. 148 “*Les retombées économiques du tourisme en Normandie*”, June 2014.

Insee Newsletter Lorraine No. 333 “*21000 emplois touristiques en Lorraine*”, February 2014.

Insee Newsletter Picardie No. 7 “*L'emploi touristique en Picardie : une dynamique de croissance*”, April 2015.

Insee Newsletter Île-de-France No. 20 “*L'Île-de-France, première région touristique française*”, June 2015.

Insee Newsletter Première No. 1555 “*Un million d'emplois liés à la présence de touristes*”, June 2015.



## **Ireland – Using business registers in regional tourism industry analysis**

### ***Description and rationale***

The Central Statistical Office of Ireland is the lead agency for this project.

The approach supports policy initiatives in Ireland to develop national and regional destination management systems and a set of destination indicators.

Business registers are the foundation upon which all business statistics are compiled. In addition to providing sampling and weighting frames, they are a rich source of information on national and regional economic and industrial structures. The comprehensive coverage of business registers is of particular relevance in the context of tourism, which is a fragmented sector dispersed across a variety of industries. Large datasets such as business registers have the advantage to be already well established and sufficiently large to provide robust, sub-national data.

This initiative illustrates how business registers can be used as a source to generate a new suite of supply side tourism indicators. It provides a profile of enterprise demography and employment for the tourism industries in Ireland at county level (NUTS 4 level).

This research undertaken within the Central Statistical Office proposes a new approach to measuring and understanding the activities of the tourism industries in Ireland based on linked-administrative data.

### ***Methodology***

The primary source data are the Business Demography statistics, published by the Central Statistics Office in Ireland, in compliance with EU legislation. This dataset has the advantage of already being compiled and consequently, the only cost of using these data is the marginal cost of conducting new analyses. Business demography statistics are sourced from the Business Register, which cover (almost) all enterprises that are active in the state.

The main variables available from the Business Register are location, legal status and size of enterprise, number of employees and persons engaged, and total turnover (although, it should be noted that the quality of the turnover data is not sufficiently good to allow publication). Other information that will be available in the future will include nationality of ownership.

Business demography statistics provide data on the active population of enterprises in the state, including enterprise births (entries) and deaths (exits or failures) along with information on growth and survival (life expectancy) rates. These statistics are also used to generate indicators of entrepreneurial activity and the factors that enhance or impede it and to understand the contribution of newly born enterprises to the creation of jobs.

The information provided is based on enterprise and employment demography in the tourism industries, irrespective of whether or not the products or services sold by these enterprises were consumed by tourists. In other words the analyses do not quantify information on enterprises and employment generated by tourism demand.

New metrics, entitled ‘Tourism Dependency Ratios’ are derived and mapped. These ratios illustrate how the tourism supply side can be analysed and understood from a spatial perspective. This

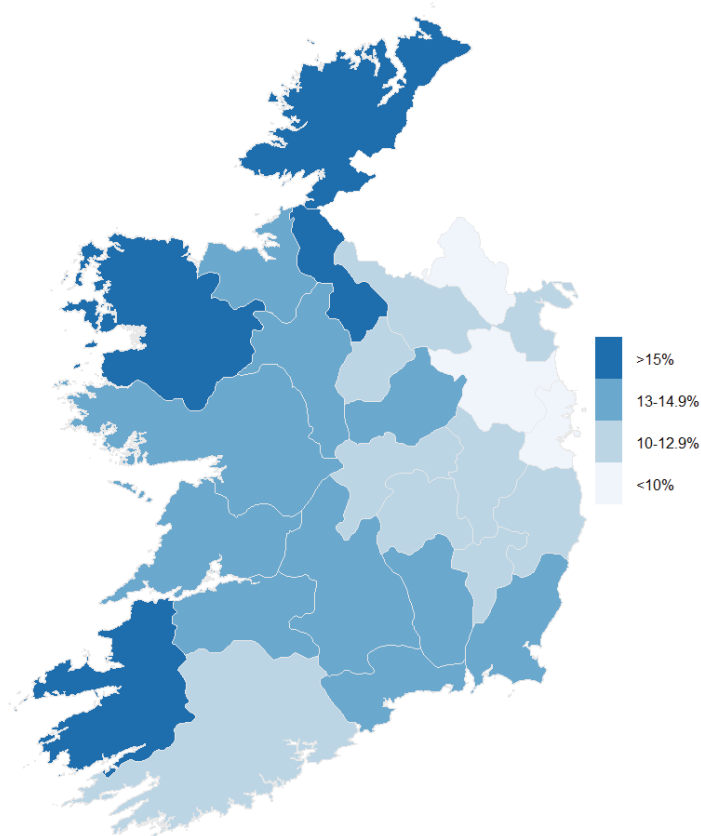
ratio is the ratio of the Tourism Industries to the Total Economy for a particular region (national or regional) and variable (Enterprise population, total employment or total turnover etc.).

Although the business register covers the universe of active enterprises in Ireland, deriving regional aggregates requires care. The geographical breakdown for each enterprise is an approximation as no comprehensive administrative source with exact business location is currently available. Consequently, county activity is based on the address where enterprises have registered for taxation purposes, rather than where businesses actually operate from. Typically, this gives an employment bias in favour of Dublin, the capital city.

### ***Key results***

A main objective of this initiative is to develop a regional demography to better illustrate the relative importance of the tourism industries to each region. Figure 7 shows that Enterprise – Tourism Dependency Ratios varied considerably across Irish counties. For example, tourism enterprises are relatively more important to counties along the western seaboard, and considerably less important in relative terms to the Greater Dublin Area and Cork.

**Figure 7. Enterprise – Tourism dependency ratios by county, Ireland, 2011**

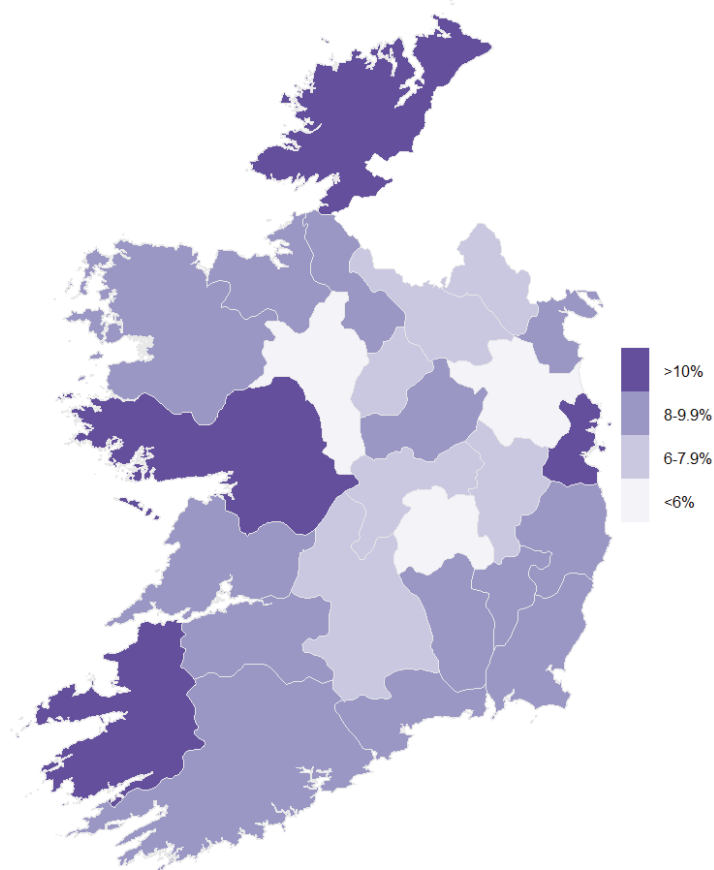


Source: J. Delaney & S. MacFeely, Central Statistical Office of Ireland.

Figure 8 shows the importance of tourism employment to the various counties. It also indicates that the composition of employment in Dublin is quite different to that of the tourism industries in

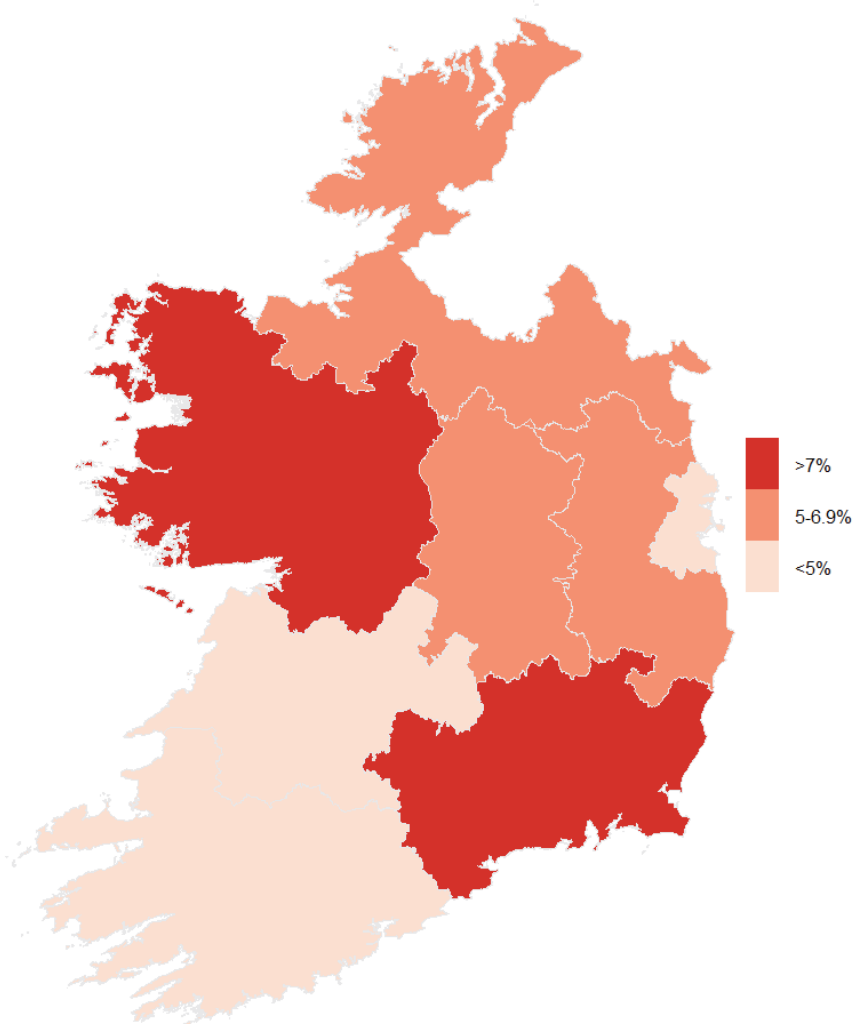
other counties, with less dependency on food and accommodation, but more for example on transport, and on arts, entertainment and recreation. This illustrates the diversity of the Dublin economy and in particular the importance of the airport, seaport and other tourism and sporting infrastructure.

**Figure 8. Employment – Tourism dependency ratios by county, Ireland, 2011**



Source: J. Delaney & S. MacFeely, Central Statistical Office of Ireland.

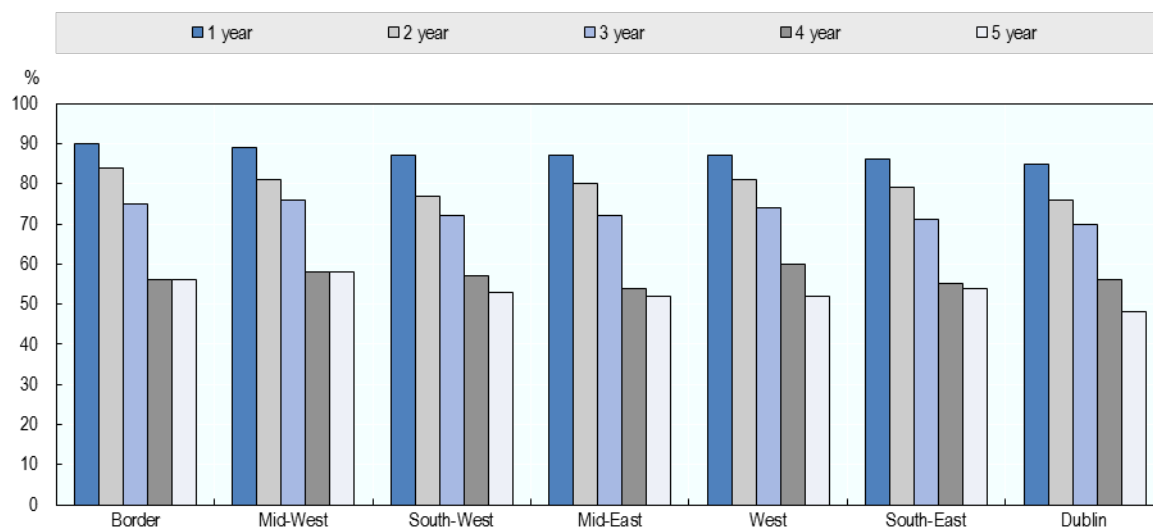
The Turnover – Tourism Dependency Ratios are quite erratic compared with enterprise and employment TDRs. For this reason, Turnover TDRs were averaged over 2009-11 and are presented at NUTS 3 level in order to make the data more stable. Turnover TDRs ranged from a low of 3% in the South-West to highs almost of 9% in the West (Figure 9).

**Figure 9. Turnover – Tourism dependency ratios by region, Ireland, 2011**

Source: J. Delaney & S. MacFeely, Central Statistical Office of Ireland.

Business demography also provides information on enterprise births, deaths and survival rates by NACE class and NUTS 4 region, providing valuable insights into the relative performance and life expectancy of the different tourism industries.

Regional births, deaths and survival rates can vary a lot. Figure 10 presents the evolution of survival rates for the tourism industries at NUTS 3 level. While the patterns are fairly similar across the regions, lower survival rates in Dublin are evident, where after five years only 48% of enterprises born in 2006 were still trading (compared with 58% in the mid-West).

**Figure 10. Enterprises survival rates by region, Ireland, 2011**

Source: J. Delaney & S. MacFeely, Central Statistical Office of Ireland.

### ***Lessons taken from the approach adopted***

The Business Demography dataset has the advantage of being already compiled and consequently, the only cost of using these data is the marginal cost of conducting new analyses. When linked at a micro-data level to other administrative data sources, the power of these data grow significantly. This is the case for example with complementary information and analyses, such as Tourism Dependency Ratios.

### ***Relevance to other countries and transferability***

Administrative data such as business registers and demography information provide a robust data source and enable comparative analyses with other economic sectors at a macro and micro level. They are already compiled to support the wider body of business statistics and so are relatively inexpensive to use and impose no additional response burden on respondents or businesses. These data generate a range of robust and readily understood business and social indicators at regional level. The linked administrative data approach is applicable across different countries. They can be adapted to different settings.

Structured business registers exist in most countries where reasonably developed statistical systems exist, making the approach outlined readily transferable and offering the opportunity to develop internationally comparable metrics by re-using already harmonised statistical sources.

***For more information***

Contact – The Central Statistical Office of Ireland

MacFeely, S., J. Delaney & F. O'Donoghue (2013), 'Using Business Registers to conduct a regional analysis of Enterprise Demography and Employment in the Tourism Industries: Learning from the Irish Experience', *Tourism Economics*, Vol. 19, No. 6, pp. 1293-1316.

Delaney & S. MacFeely (2014), "Extending Supply Side Statistics for the Tourism Sector: A new approach based on linked-administrative data", *Journal of the Social and Statistical Inquiry Society of Ireland*, forthcoming.

## **New Zealand – Analysing regional tourism spending through electronic card transactions**

### ***Description and rationale***

The Ministry of Business, Innovation and Employment is the lead agency for this project.

International tourism plays an important role in the New Zealand economy, contributing with NZD 30 billion to the country's GDP in 2015 (Statistics New Zealand, 2015). New Zealand's Tourism Industry Association has an aspirational goal is to reach NZD 41 billion by 2025 improvements in the competitiveness of New Zealand's tourism.

In 2012, the Ministry of Business, Innovation and Employment (MBIE) launched the regional tourism indicators (RTI) initiative, a measure to improve the understanding of tourism at the regional level. The RTI are designed to provide timely data on tourism spending, both international and domestic travellers, in the various regions of New Zealand. RTI use electronic card transaction data as the source. The indicators can potentially help shaping the different regions' advertising strategy, provide support for major events, inform policy work to better attract and cater for particular markets, and increase the value of international visitors.

RTI have been developed in response to a need to better understand where in the country visitors travel, what they spend their money on, behavioural changes by season and the impacts of events. RTI data are available back to January 2008. They are compiled on a monthly basis, and can be summarised as monthly, quarterly or annual data.

### ***Methodology***

The use of survey data to capture spending information in various regions would be expensive as it requires a large sample size to provide data at the detailed level required.

Statistics New Zealand uses electronic card transaction (ECT) data to provide timely measures of retail trade. ECTs are made up of two series:

- international data from Paymark (through MarketView) – which is used by about 74 000 merchants or more than 70% of New Zealand retailers; and
- domestic data captured through Marketview from anonym electronic spending on Bank of New Zealand (BNZ) cards. BNZ holds around 20% of the New Zealand card market and is broadly representative of New Zealand geographically (Ministry of Business, Innovation and Employment, 2013).

For the international data, all the spending in the RTI data set is considered to be tourism related. For the domestic side, domestic tourism spending is defined as all spending by cardholders with merchants located outside the area in which the cardholder resides.<sup>1</sup>

The RTI data includes all debit, credit and charge card transactions with New Zealand based merchants and all card-present transactions at the point of sale. The data set is best used to identify

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1. Also excluded from the data are cardholder-merchant area relationships where the pattern of spending indicated that cardholders treated the merchant area as local. A full list of cardholder-merchant area relationships defined as local is provided in the excel sheet below.

changes over time. The RTI enable to see more accurately which visitor markets are coming to a given region, track whether the market mix is changing over time and identify growth markets.

The variables used are:

- Origin of merchant: territorial authority (domestic).
- Origin of card holder: country or territorial authority (domestic).
- Type of merchant: all merchants have been coded to an ANZSIC 2006 (Australia and New Zealand Standard Industry Classification). Each merchant can only be coded to one ANZSIC, which is defined as the primary source of revenue for the merchant.
- Month and year.

For ease of reporting, the ANZSIC industries have been grouped into the following categories:

- Accommodation
- Cultural and recreational services
- Education
- Food and beverage Services
- Food retailing
- Fuel retailing
- Non-tourism related
- Other retailing
- Transport (including travel agency and tours)

The methodology has its own limits. RTI data excludes:

- Cash, cheques or hire purchase transactions.
- Card-absent transactions (payments of invoices, mail order, telephone and internet sales via credit card, direct debit from credit cards etc.), where the card is not present directly at a point of sale terminal – does not include prepaid expenditure.
- Transactions by New Zealand card holders whilst overseas.
- Automatic payments or direct debits from bank accounts.
- The domestic data excludes corporate debit cards because their location is attributed to the head office rather than the location of the card user. Also, the data does not include prepaid expenditure or card-not-present transactions (purchases on the Internet or phone), which must be taken into account when interpreting the data.

- The data has not been adjusted for inflation – so when comparing between years some increase may be attributable to changes in price rather than increases in volume.

RTI by themselves cannot provide actual expenditure figures, as they only represent a portion of total tourism spending (as they monitor a sample of electronic transactions). For this reason, the Ministry of Business, Innovation and Employment publishes data from RTI as an index which measures the change in expenditure rather than the actual dollars spent.

### ***Key Results***

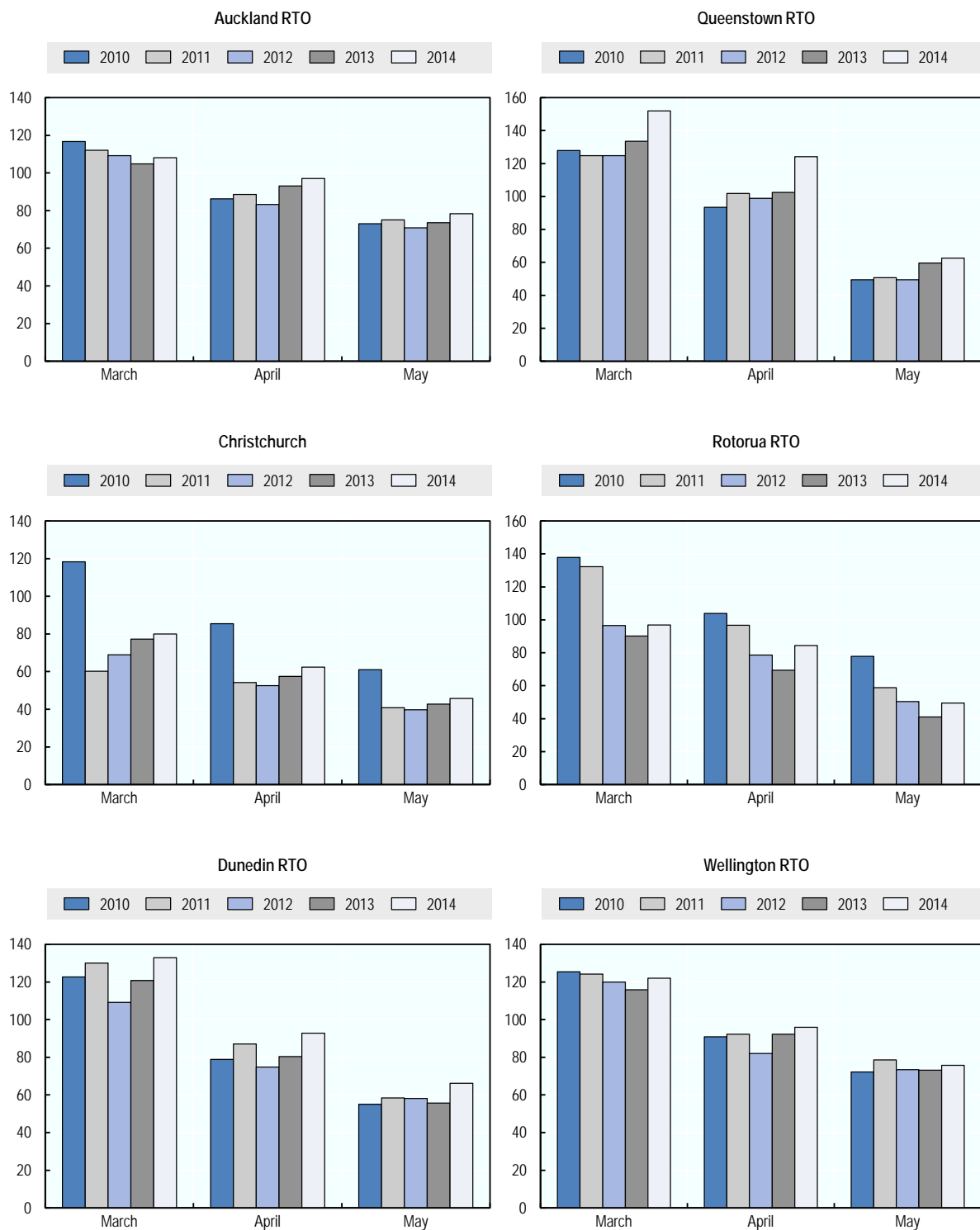
RTI is presented as an index to avoid confusion with estimates for the total expenditure that are obtained from the International Visitor Survey and other more exhaustive sources. The index shows spending compared to the “average month in 2008”, which is defined as 100. A value of 110 for an index means spending is 10 per cent above the 2008 average. The data can cover international tourism, domestic tourism. They can be filtered by Regional Tourism Organization, local destination or industry group.

Regional tourism organisations can use the data to effectively analyse any promotional or advertising spending and better target either promising or underperforming markets. The two examples below show what can be achieved using RTI, the new insights and the potential.

Figure 11 compares monthly international visitor spending in six Regional Tourism Organisations.

**Figure 11. Monthly spending index - total international last three months, New Zealand**

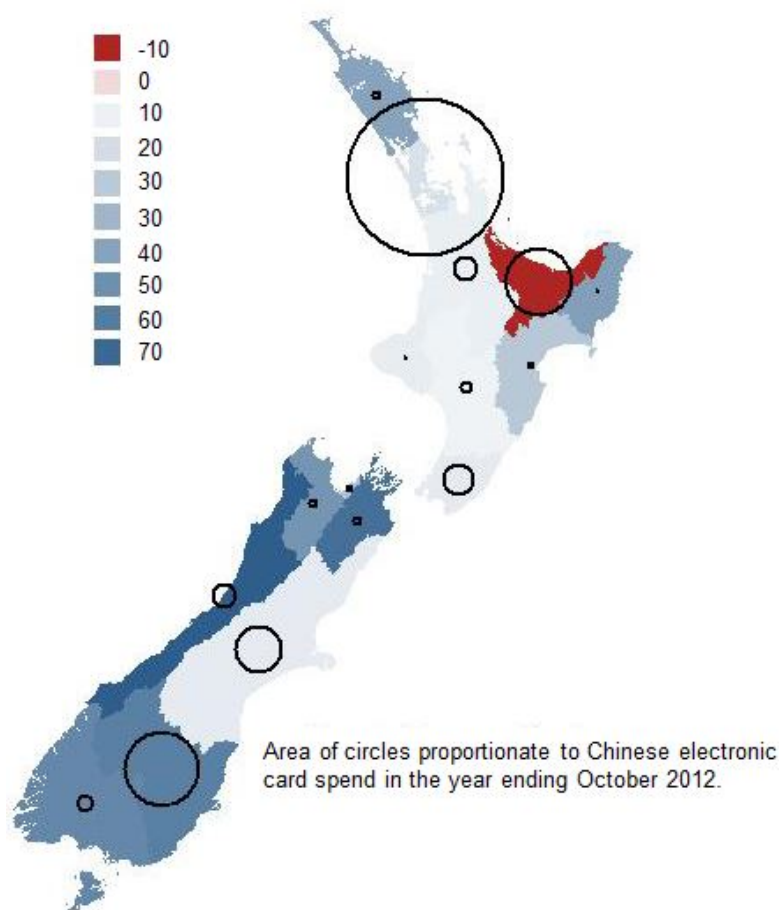
Index (average month in 2008=100)



Source: Ministry of Business, Innovation and Employment (2013).

Figure 12 shows the different growth patterns in Chinese tourists spending by region. For the tourism industry, this is a strategic issue.

**Figure 12. Regional Chinese spending in New Zealand, 2012**



Source: Ministry of Business, Innovation and Employment (2013), <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/monthly-regional-tourism-estimates/previous-regional-tourism-series/regional-tourism-indicators/rti-country-analysis/chinese-electronic-card-spend>

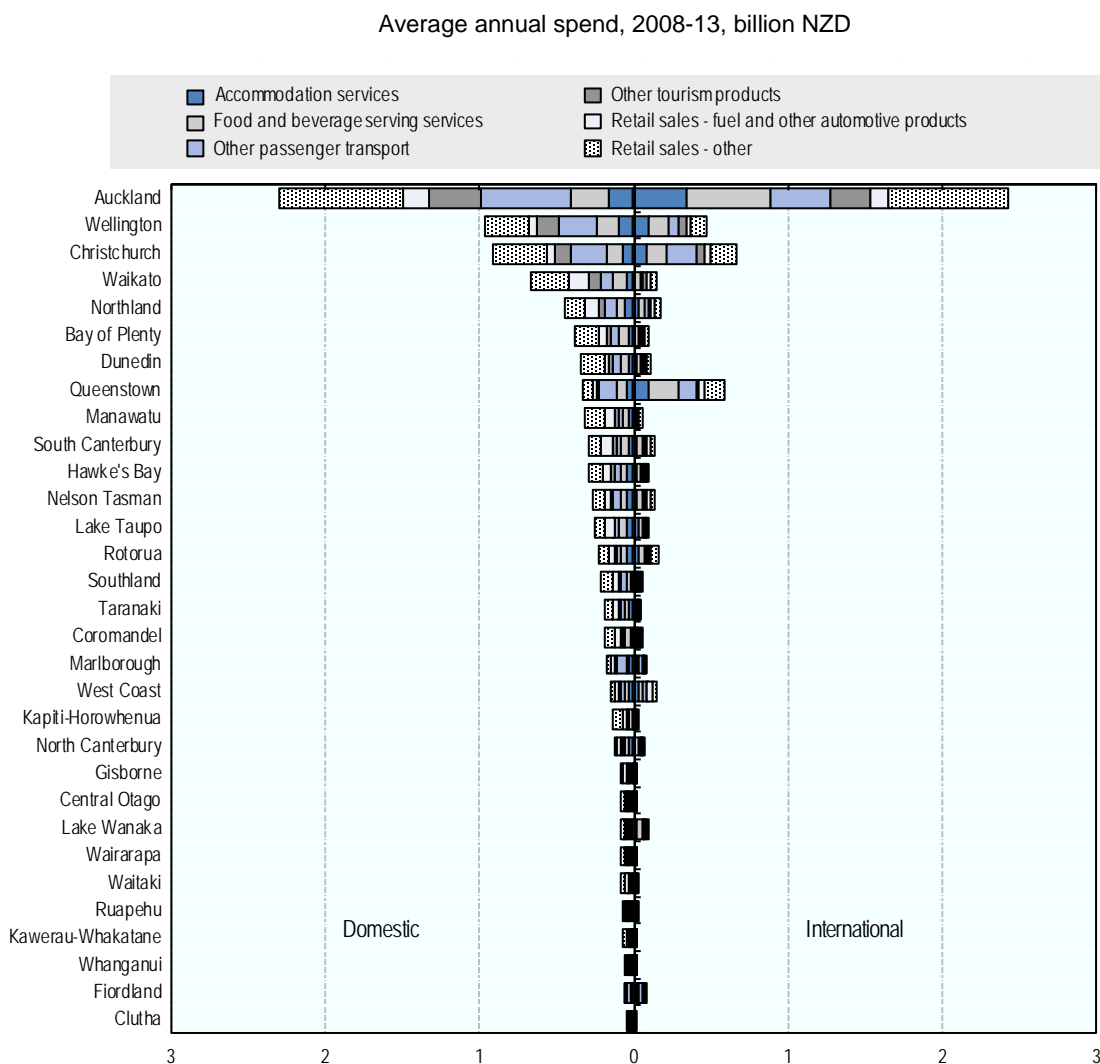
### ***Moving forward the approach adopted***

The Regional Tourism Estimates (RTEs) take the RTI one step further by building on its advantages. They use the same electronic card transaction data used by RTIs to produce estimates of absolute dollar values (instead of indices) of tourism expenditure which can be disaggregated at a detailed level e.g. by industry, visitors' country of origin, destination regions, Regional Tourism Organisation level and territorial authority. To achieve this, RTEs are based on RTI and are calibrated by the Tourism Satellite Account by industry and the international visitor survey by visitor's country of origin.

An example of the type of analysis that can be done with RTE data is shown on Figure 13 that displays both domestic and international average annual tourism spending by Regional Tourism Organisation for the 2008-13 period. The graph shows that Auckland is the centre of tourism expenditure for both domestic and international tourism, while some regions are dominated by

domestic tourism (e.g. Waikato, Wellington, Hawke’s Bay) and others by international tourism (Queenstown, Fiordland). This is a relevant initiative that provides reliable and region specific monthly information about growth/change in tourism spending in different regions of the country.

**Figure 13. Tourism spend by Regional Tourism Organization in New Zealand**



Source: Ministry of Business, Innovation and Employment (2013).

In 2016, MBIE launched the Monthly Regional Tourism Estimates (MRTEs). The MRTEs is an improvement of both the RTIs and the RTEs. MRTEs are available monthly like the RTIs, but provide estimates of actual dollars spent like the RTEs. Spend estimates can be broken down by region, tourist country of origin and product type. MRTEs are based in part on data from electronic card transactions, but a number of improvements have been made to the data and statistical methods used.

Like the RTEs, MRTEs are calibrated by the Tourism Satellite Account by industry and the international visitor survey by visitor’s country of origin. However, because the MRTEs are available before information from the Tourism Satellite Account or international visitor survey is available, each total spend for combination of product classification and country of origin must be forecast. This

requires making assumptions about how spend in these categories varies across regions. The advantage of this approach is MRTEs are very up to date with only a two-month delay in data being publicly available, providing the tourism industry with rapid feedback on the state of the tourism demand.

MRTEs are presented in interactive graphics on the MBIE website that allow users to quickly and easily filter data by year, region, product type or country of origin. This format is more user friendly than data tables for non-technical users. It also reduces the demand for MBIE to produce custom data cuts or static graphics, as these can be built by the user using the interactive web graphics.

### ***Lessons taken from the approach adopted***

In 2015, MBIE conducted a review of the RTIs in consultation with industry and government organisations. The review's recommendations included: publishing estimates of dollars spent rather than an index, improving the usability of the RTIs, and a number of improvements to the data used. These recommendations resulted in the development of the MRTEs.

### ***Relevance to other countries and transferability***

The production of the RTIs and MRTEs depend on a number of factors that are common across different countries:

- The availability of electronic transactions data: RTIs make heavy use of electronic transactions data to estimate spending across different regions and different product types. This level of granularity would be difficult to achieve using only survey data.
- Use of interactive web graphics: Interactive web graphics provide easy way for non-technical users to interact with the MRTEs. It also reduces the demand on MBIE for custom data or static graphics as these can be produced by users themselves.

### ***For more information***

Contact – The Ministry of Business, Innovation and Employment

Ministry of Business, Innovation and Employment, (2013). Regional tourism indicators.

<http://www.med.govt.nz/sectors-industries/tourism/tourism-research-data/regional-tourism-indicators>

Statistics New Zealand, (2015). Tourism Satellite Account 2015.

[http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/Tourism/tourism-satellite-account-2015.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/Tourism/tourism-satellite-account-2015.aspx)

Ministry of Business, Innovation and Employment, (2016), Monthly Regional Tourism Estimates.

[http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/Tourism/tourism-satellite-account-2015.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/Tourism/tourism-satellite-account-2015.aspx)



## Spain – Measuring tourism sustainability at regional level

### *Description and rationale*

The Andalusian Tourism Government and Málaga University are the lead agencies for this project.

The indicator system for sustainable tourism in Andalusia allows to assess the sustainability issues addressed in the General Plan for Sustainable Tourism in Andalusia 2014-20, such as the enhancement of natural, cultural, territorial, and scenic resources; the stability and quality of employment; and the complementary relations between the products, overall quality, innovation, and competitiveness of the destination. The system makes it possible to understand the sustainability impacts of the General Plan by providing up-to-date, dynamic, and interrelated information.

### *Methodology*

The system comprises 348 indicators for the year of analysis, as well as a reference point for each of them. The whole system comprises a four-year period of analysis, which is usually the planning period. Given the large number of indicators, synthetic indicators have been developed to simplify the analysis. Each indicator is weighted based on sources of information and statistics available.

Indicators have been suggested based on information available. This information must primarily come from official bodies, ensuring a rigorous methodological procedure, statistical representativeness and continuity. The process established to compile the indicators enables a continuous review of the various sources, and the identification of areas where statistical information is lacking despite being considered important for the system.

This system measures the evolution towards sustainability but does not determine whether the tourism destination is sustainable or not. The reason is that, while the value of the indicator is compared with the evolution of this same indicator throughout a specified period, the desired thresholds or benchmarks are not defined.

The methodology includes three different levels of analysis, with synthetic indicators available at each level. The first level corresponds to seven key areas: governance, territory, vulnerability, profitability, diversification, quality, and innovation. The second level covers 39 different themes (e.g. focus towards citizens, environmental awareness, seasonality, productivity, product positioning, public infrastructure, online commerce). The third level presents a set of 348 indicators. The system analyses sustainable development as an integral concept and allows analysis based on interrelations between the different components. Interpretation is made easy based on the usage of a universal colour code which is the traffic light system of alert.

The seven key areas are as follows:

- Governance area: Evaluates the performance of the regional government in terms of creating networks that foster collaboration among stakeholders, the participation of the residents and the private sector in the policy making of the destination, and the efficiency of administrative processes.
- Territory area: Tourism and territory are inevitably connected. Territory is both the physical support and an attraction for tourism. The aim is to launch an evaluation of the sustainability of the territory – i.e. of the destination – with variables that are not always tourism-related,

taking into account the interrelations of tourism with the heritage-related, natural, social, economic and institutional surroundings.

- Vulnerability area: refers to the likelihood that the destination will be harmed by exposure to tensions associated with the surroundings and the lack of or poor capacity for adaptation to these changes. This area allows understanding the degree of vulnerability of the tourism demand with respect to, for instance, the structure of the markets of origin, the segments, the seasonality, accommodation, transport, and intermediaries.
- Profitability area: analyses the performance of tourism as an economic sector, including aspects such as income generation, employment, and multiplier effects.
- Diversification area: measures the degree of complementarity between different products/demands, as well as whether the image offered by Andalusia transmits this range of offers. It assesses the resources susceptible to being used as tourism assets, taking into account the capacity and diversity of tourism products available (sun and beach, culture, natural areas, wellness, etc.).
- Quality area: evaluates satisfaction of demand and the ability and performance of the supply to meet tourists' demands, i.e. approaching the measurement of from demand and supply perspective.
- Innovation area: includes measurements of internet usage by potential demand and supply, online commercialisation, customer relationship management, social networks, and mobile technology. This area measures the adequate development of technology at the destination in terms of both the potential and real demand and the supply.

### ***Key results***

This note presents as an example the results linked to the quality area. These results have been used to prepare the General Plan for Sustainable Tourism in Andalusia 2014-20. In Figure 14, the perception and measurement of the quality in the year 2012 is compared with the period 2008-11 in terms of: i) the destination as a whole; ii) the basic tourism resources (beach, heritage and natural environment); iii) the public infrastructure; and for iv) two tourism industry branches (accommodation and restaurants and bars).

154. The theme Destination includes the overall assessment of Andalusia as a tourist destination, as well as an assessment of its capacity to adequately meet the demands of tourists. The main aspects affecting the quality of Andalusia as tourism destination are:

- The Public Administration decreased budgetary effort with impacts on budgets for maintenance and improving the destination, but also affecting the quality of beaches and of health services.
- The lack of professionalization of the tourism sector with insufficient tourism education and training in the whole education system to cope with the importance of the industry.
- The rather low level of accessibility for tourism supply vis a vis the rest of Spain and the weak measurement of accessibility for tourism resources which makes analysis difficult.

- The protection of outstanding cultural and natural assets identified by overall increase of UNESCO threat intensity coefficient.
- The decrease of the number of quality certifications and standards for restaurant and accommodation and also in terms of private investment for maintenance and improvement. These aspects are also affecting the market perception with respect to gastronomy and the infrastructure of accommodation.

### ***Moving forward the approach adopted***

Some extension of the system have already been developed and used for specific plans such as the Marketing Plan. The software used for the automatization of the calculation and the design of presentation of results are going also to be adapted specifically for managers but also for the general public.

### ***Lessons taken from the approach adopted***

These sustainability indicators are useful tools in the decision making process, both in the planning stage and in public management. Their value lies in objectively revealing the reality of a tourist destination. The system is able to offer an analysis of the baseline situation, but also enables progress to be monitored.

The measurement system enables to outline the situation of the tourism destination before and after planning, and involves a continuous assessment that serves as a warning system predicting deviations in results or significant changes in the environment, meant to allow for timely rectifications and to avoid imbalances to the sustainable tourist destination model.

### ***Relevance to other countries and transferability***

Managers of tourism in the destination can use the system for various purposes:

- Diagnosing the destination by identifying weaknesses in its progress toward sustainability and tracking them;
- Identifying new threats and changing trends that warrant consideration during planning;
- Assessing the current situation with the purpose of contributing to progress toward sustainability and reducing the level of uncertainty of tourism policies;
- Setting realistic goals and objectives, with reference to the current levels of the different indicators;
- Assessing the level of success of the steps taken on the basis of observed changes;
- Learning the situation at the destination after planning is complete and incorporating experience and knowledge of the process for future developments.

Figure 14. Tourism sustainability in Andalusia – Quality area

◊ Quality	◊ Destination	● Level of loyalty
		◊ Level of recommendation
		● Market opinion on the tourist destination
		● Consumer violations in the tourist destination
		● Complaints in the tourist sector
		◊ Complaints to the admin. by Andalusians
		◊ Satisfaction with the destination
		◊ Satisfaction with the resources
		— Satisfaction with the processes
		● Quality of offerings, certifications
		◊ Structure: professionalisation of the sector
		● Processes: complaint resolution
		● Quality of training
		◊ Investment in the maintenance and improvement of the destination
	● Information about the environment	
	◊ Accessibility of the destination	
	◊ Tourism resources: Beach	● Opinion of the beaches
		◊ Quality of the beaches, certifications
		● Quality of the beaches, Blue Flag certification
		● Satisfaction with the beaches
		◊ Investing in improvements
	◊ Tourism resources: Heritage	● Accessibility of the beaches
		● Market opinion of cultural heritage
		— Market opinion
		◊ Supply quality, overall excellence
		◊ Overall supply quality (BIC)
	● Tourism resources: Natural areas	— Processes
		◊ Accessibility of heritage
		● Market opinion of natural environment
		— Processes
	● Public infrastructure	◊ Supply quality, overall excellence
		● Quality of natural areas, certifications
		● Accessibility of natural areas
		● Market opinion of the transportation infrastructure
		● Market satisfaction with air transportation
		◊ Market satisfaction with rail transportation
		— Market satisfaction with mobility at the destination
		● Transportation, market complaints
		● Transportation, road quality
		● Road transportation quality, accident rates
		— Quality of airports, certifications
		◊ Quality of transportation by airport, delays
		● Quality of rail transportation
		● Market opinion of security
		— Market satisfaction with security
		● Security, crime rate
		● Market opinion of information
● Market opinion of cleanliness		
● Cleanliness, market complaints		
● Market opinion of health		
● Health, inspection activity		
● Health, level of satisfaction of citizens		
◊ Health, provision of resources		
◊ Accommodation	● Market opinion of accommodations	
	— Market satisfaction with accommodations	
	● Accommodations, hospitality complaints	
	● Accommodation certifications	
	— Satisfaction with accommodation services (processes)	
	◊ Satisfaction with accommodation infrastructure	
	● Infrastructure: hotels-categories	
	● Market satisfaction with accommodation staff	
◊ Personalised service, accommodations		
◊ Restaurants and bars	◊ Accessibility of accommodations	
	◊ Investment in maintenance and improvements	
	● Market opinion of food service	
	◊ Market satisfaction with gastronomy	
	● Food service - complaints	
	◊ Food service - certifications	
◊ Accessibility of restaurants		
● Investment in maintenance and improvements. Food service		
● Personalised service. Food service		

The indicators identify whether the tourism system is evolving towards sustainability or not, with the interpretation following the traffic light system of alert.  
 ● Green; — Yellow; ◊ Red.

Source: Sustainable Tourism Development Indicators for Andalusia, <http://www.turismoandaluz.com/estadisticas/sist-ind>

***For more information***

Contact – Andalusian Tourism Government – Empresa Pública para la gestión del Turismo y Deporte de Andalucía and Málaga University ([saeta@andalucia.org](mailto:saeta@andalucia.org))

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## Switzerland – Benchmarking the competitiveness of tourism destinations and regions

### *Description and rationale*

BAKBASEL and the State Secretariat for Economic Affairs are the lead agencies for this project.

BAKBASEL is an economic research and consultancy company which is providing support since 2005 to the Swiss government for the analysis of tourism. The benchmarking programme measures, analyses and compares the success and competitiveness of tourist destinations and regions with the objective to increase their competitiveness. By focusing on destinations, the recommended actions derived from the results can be applied directly by the service providers within the tourism industry.

The benchmarking programme is supported by Switzerland's key tourism regions: Wallis, Bern, Graubünden, Waadt, Tessin and Central Switzerland. The State Secretariat for Economic Affairs SECO financially supports the programme through Innotour, an instrument for promoting innovation, cooperation and knowledge building in the tourism industry.

### *Methodology*

The “BAK DESTINATIONS MONITOR®” is at the heart of the tourism benchmarking activities. It is an online benchmarking analysis tool for tourism destinations and regions. It provides the tourism industry with strategic information and a decision-making tool. It contains more than 300 tourism destinations and regions in five countries with over 100 key figures per destination. This information is updated on a yearly basis.

In the benchmarking programme, BAKBASEL assesses the performance of destinations. The “BAK TOPINDEX” is used for measuring the success of destinations and comparing them with their international peers. This performance indicator is derived from the development of a destination's market shares, occupancy rate and earning power. First, the relative development of hotel overnight stays (20% weighting) measures volume performance or, in other words, the development of market shares. Second, the occupancy rate of existing hotel beds (50% weighting) facilitates an overview of the use of existing capacities, which is a key economic factor. Third, the relative hotel prices (30% weighting) indicate the destination's earning power in the form of income per stay per night. A destination is therefore successful when it manages to increase its market share, utilise its capacities as much as possible and at the same time generate a high income per stay per night.

### *Key results*

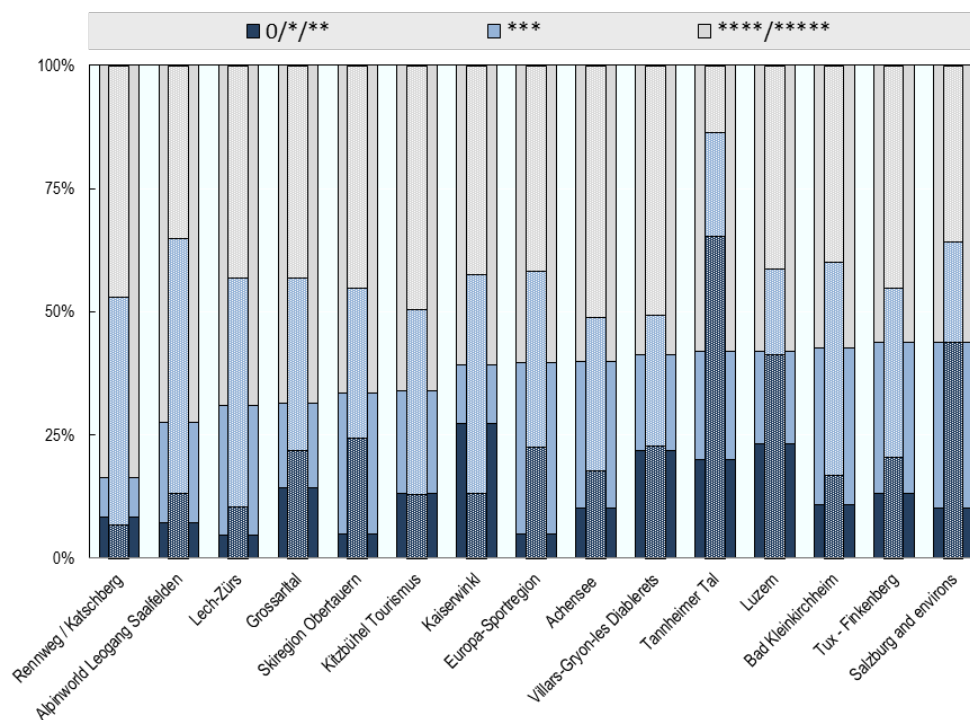
The system allows measuring performance and the most successful alpine destination, based on occupancy rate, relative prices and market shares (Table 13).

**Table 13. The 15 most successful destinations in the Alps, Switzerland, 2014**

Position 2014	Destination	Region	TOP Index 2014	Index			Position		
				evolution	occupancy	prices	2013	2009	2007
1	Grossarlal	Salzburg	5.2	4.3	6.0	4.4	2	1	6
2	Luzern	Central Switzerland	5.0	4.7	5.8	3.8	3	10	5
3	Kleinwalsertal	Vorarlberg	4.9	3.5	5.6	4.8	1	2	8
4	Salzburg and environs	Salzburg	4.8	5.1	5.1	4.0	8	14	4
5	Alpe di Siusi	South Tirol	4.7	4.2	4.8	5.0	16	14	11
6	Rennweg/Katschberg	Carinthia	4.7	3.4	5.8	3.7	4	3	1
7	Achensee	Tirol	4.6	3.6	5.7	3.6	5	4	7
8	Kitzbühel Tourismus	Tirol	4.6	4.5	4.1	5.6	21	29	17
9	Tux – Finkenber	Tirol	4.5	3.8	5.4	3.6	5	4	7
10	Serfauss-Fis-Ladis	Tirol	4.5	4.3	4.9	4.0	7	5	3
11	Oberstdorf	Tirol	4.5	3.2	4.8	4.9	12	8	11
12	Innsbruck and environs	Tirol	4.5	4.6	5.0	3.5	14	28	18
13	Wilder Kaiser	Tirol	4.4	3.7	5.0	4.0	18	22	26
14	Alpinworld Leogang Saalfelden	Tirol	4.4	5.2	4.7	3.4	22	19	61
15	Ferienregion Reutte	Tirol	4.4	6.0	4.1	3.8	17	127	44

Note: BAK TOPINDEX tourism year, average in the Alpine region = 3.5.  
Source: BAKBASEL.

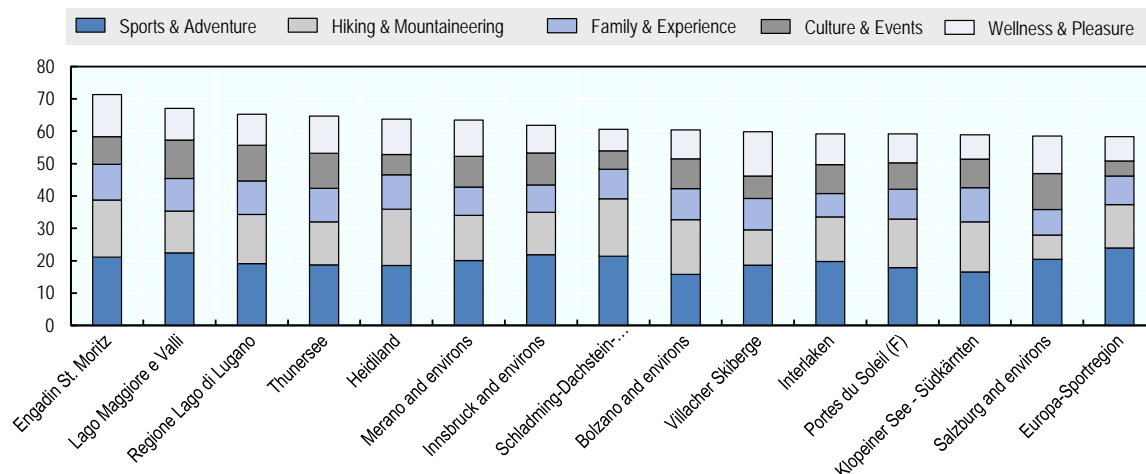
The system also shows the hotel structure by star rating, including Alpine destinations with the highest percentage of beds in the top and luxury segment (Figure 15).

**Figure 15. Hotel structure in selected Alpine destinations, 2000 and 2014**


Note: Percentage of hotel beds by star rating in %, wide column = 2014, narrow column = 2000.  
Source: Various statistical offices, BAKBASEL.

The BAK Summer Attractiveness indicator measures the attractiveness of destinations in summer using more than 100 indicators covering offers in areas such as “Sport & Adventure”, “Hiking & Mountaineering”, “Family & Experience”, “Wellness & Pleasure” and “Culture & Events” (Figure 16).

**Figure 16. Index for measuring the attractiveness and diversity of the summer offers, 2014**



Source: BAKBASEL.

### ***Moving forward the approach adopted***

Some new developments are in the pipeline. The key innovation is the implementation of so-called frontier analyses for determining the success factors of tourism destinations and identifying limiting factors in specific destinations. The use of these relatively new econometric methods should give an indication of how much the success of a (specific) destination depends on its attractiveness. Traditional analysis methods as well as econometric approaches have so far been unable, or only able to a limited extent, to arrive at such results.

### ***Lessons taken from the approach adopted***

The Benchmarking provides valuable analysis for alpine tourism destinations. The analysis provides detailed and multilayer information on the tourism performance and the structure of the tourism offer. The real added value comes with the international comparison. The comparison with the international competitors is essential to profoundly know the market positioning and to continuously improve the competitiveness of Swiss alpine tourism destinations.

### ***Relevance to other countries and transferability***

The Benchmarking is an important pillar for Switzerland's tourism policy. In general terms it can be said, that the international comparison is especially valuable in cases where the framework conditions for tourism are comparable between the different countries. A meaningful Benchmarking needs a broad and reliable database. Setting up such a database is complex and costly.

***For more information***

Contact – BAKBASEL and the State Secretariat for Economic Affairs

BAKBASEL (2016): *Tourismus Benchmarking – die Schweizer Tourismuswirtschaft im internationalen Vergleich*», Schlussbericht zur Projektphase 2014-2015.

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## United Kingdom – Optimising tourism intelligence at regional level

### *Description and rationale*

The Office for National Statistics (ONS) is the lead agency for this project.

The Tourism Intelligence Unit (TIU) at the ONS examines the value of tourism in the regions and sub-regions of the United Kingdom. This project is mainly aimed at optimising the amount of information from all the data sources available at the regional level. The TIU initiative considers both the supply and demand sides of tourism.

In particular, the project extends the Tourism Satellite Account (TSA) analysis to the regional level in the UK and the sub-regional level in England and Wales (down to NUTS 2 and 3) to give an indication of the value of tourism at these spatial scales. The disaggregation of the main outputs of the TSA to the regional and sub-regional levels is achieved through the use of the business and visitor expenditure survey data.

This methodology has been applied for the years 2008, 2009, 2011 and 2013 in the UK and in the latest release for the reference year 2013 (published in May 2016). The work has been commissioned by the Department for Culture, Media and Sport (DCMS) which is the UK government department responsible for tourism policy. This is important from a governance perspective as it demonstrates that the methodology is accepted by policy makers and provides a context for tourism policy making at the regional level in the UK.

### *Methodology*

The project compiles and analyses data which are produced within ONS and also data sourced externally. ONS data sources entirely cover the measurement of the supply side of tourism (annual business survey, supply and use tables). On the demand side, the only component of tourists' consumption measured within the ONS is the inbound expenditure of tourists. The consumption of overnight domestic tourism and the expenditure of domestic excursionists (or tourism day visits) are all collected from external suppliers.

For the supply side analysis, the methodology is following two distinct steps. The first step is to calculate the Gross Value Added of the Tourism Industries (GVATI) following the recommendations of the TSA: RMF. GVATI is an important indicator as it allows determining the levels of output attributable to tourism industries in each region and sub-region. The second step is to balance the GVA relating to the tourism industries within each region with the total supply of producers from the ONS Supply and Use tables. The choice of using the Supply and Use tables as the denominator allows to obtain regional totals summing up to national UK figures, in particular those published in the UK Tourism Satellite Account. This results in regional and sub-regional tourism GVA and total GVA results all adding up to the UK totals published previously. This internal consistency is a key advantage of the methodology.

For the demand side analysis, calculating UK tourism consumption is more complex due to the numerous data sources that exist, and the fact that these sources change according to the component of the tourism consumption being considered. The only demand component measured in ONS is the expenditure of inbound visitors through the International Passenger Survey (IPS). The expenditure of domestic overnight visitors is contained in the Great Britain Tourism Survey (GBTS) implemented by Taylor Nelson Sofres (TNS) and commissioned by the national tourist boards. Tourism day visits expenditure is measured by the Great Britain Day Visits Survey (GBDVS) implemented by Taylor

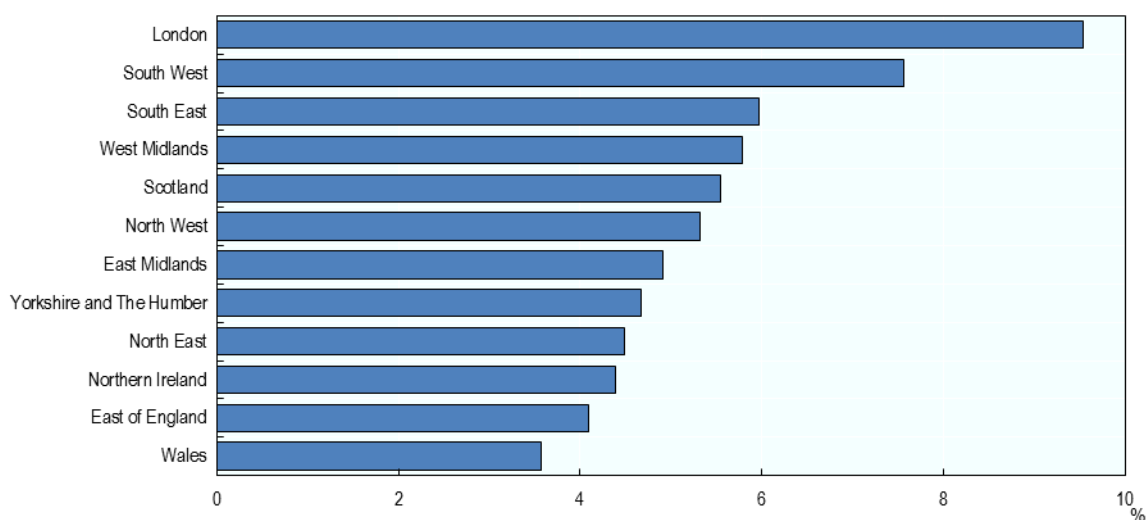
Nelson Sofres (TNS) and commissioned by the national tourist boards. These surveys are all available at the regional level.

Having presented the methodological framework for both the supply and the demand sides of tourism, it is necessary to know how important tourism demand is in explaining the output of individual regions (reconciling demand and supply). This is determined by calculating a ‘Tourism Ratio’ for each region or sub region. This statistic is the result of dividing the total demand by total supply in each region. The tourism ratio represents a good measure of the economic importance of the tourism sector within regions, as it shows the relationship between tourism demand and supply.

### **Key results**

Figure 17 shows the percentage figure for GVATI at the regional level. A high figure means that a high percentage of regional output (represented by GVA) is accounted for by the tourism industries within that region. This reveals the relative importance of the tourism industries in terms of contributing to GVA within each of the regions. It does not, however, relate this to visitor expenditure so this figure does not provide an accurate picture of the direct contribution of tourism to a region.

**Figure 17. Gross Value Added of the tourism industries in the United Kingdom, 2013**

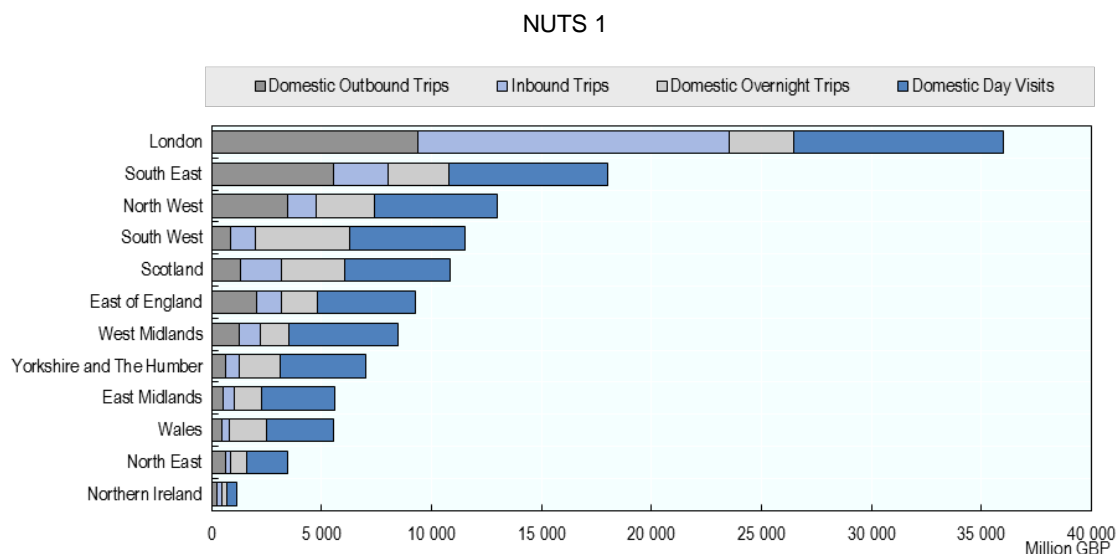


Source: UK-TSA 2013 (ONS), ONS IO&SUT 2013, Annual Business Survey 2013.

<https://www.ons.gov.uk/search?q=tourism+industries+gva>

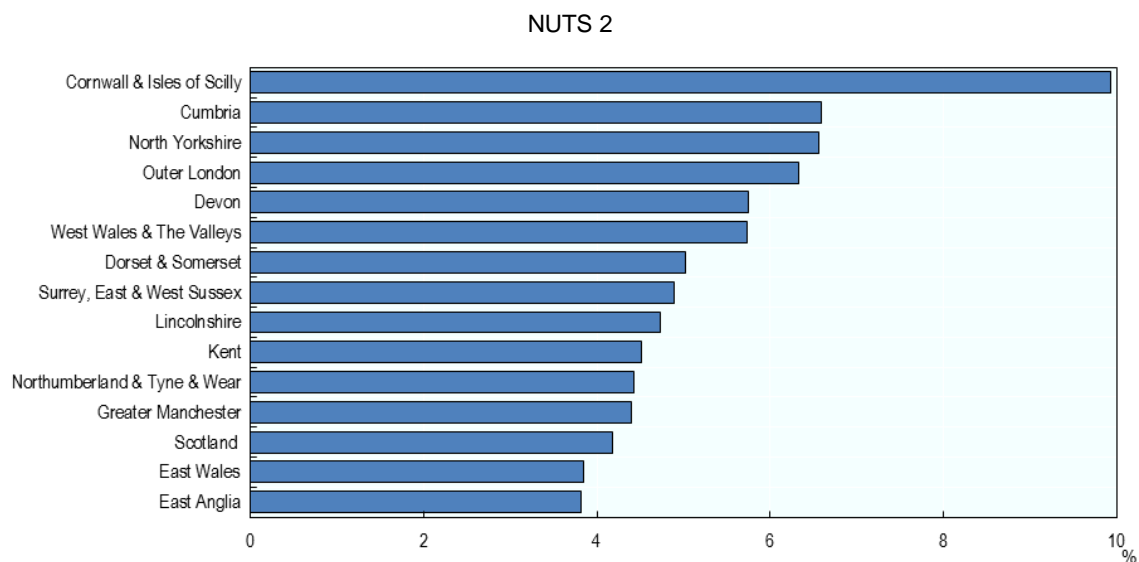
<https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/datasets/regionalvalueoftourismestimatesformuts1andnuts2areas>

Figure 18 shows the spending related to inbound, domestic and domestic outbound tourism by region. It shows for example for two regions the significant weight of airports and ferry and channel tunnel departures in domestic outbound travel.

**Figure 18. Estimated tourism expenditure in the United Kingdom, 2013**


Source: UK-TSA 2013 (ONS); International Passenger Survey 2013; GB Day Visits Survey 2013; GB Tourism Survey 2013.  
<https://www.ons.gov.uk/search?q=tourism+industries+gva>  
<https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/datasets/regionalvalueoftourismestimatesfornuts1andnuts2areas>

Figure 19 shows the tourism ratio at the sub-regional level. It shows that tourism has a dominant role in driving output in some regions, for example in relation to Cornwall and the Isles of Scilly and Cumbria. The UK average is 3.5%.

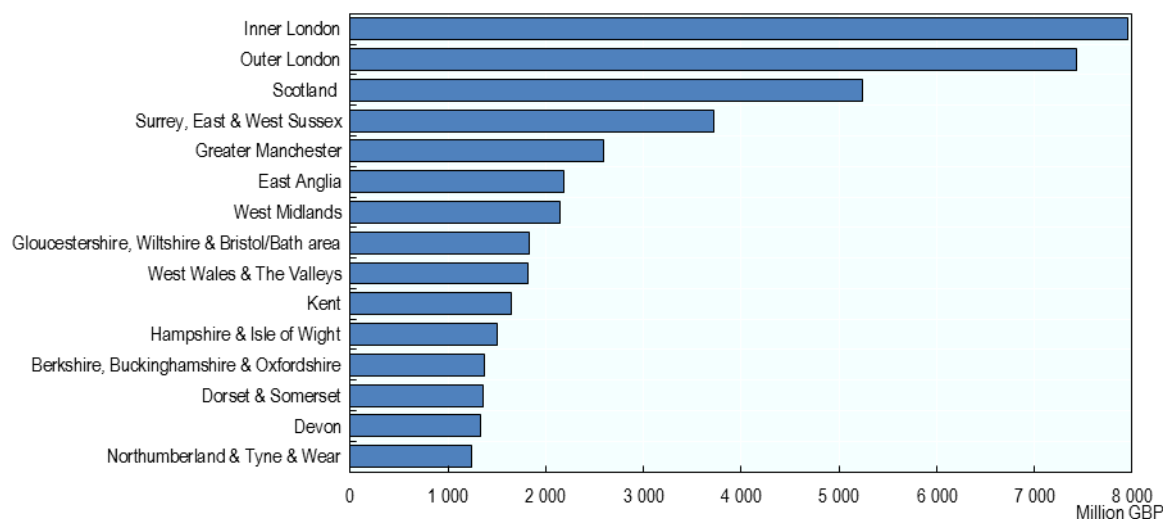
**Figure 19. Tourism ratios for the sub-regions of England and Wales, 2013**


Source: UK TSA 2013 (ONS), ONS IO&SUT 2013, Annual Business Survey 2013; GB Day Visits Survey 2013; GB Tourism Survey 2013; International Passenger Survey 2013.

In Figure 20 the tourism ratio is applied to total output of each region to give a measure of tourism direct Gross Value Added (TDGVA), a measure of how tourism accounts for the output of industries within the regional economy. It is clear that London has a dominant position in terms of TDGVA, but the presence of major ports is also important as Surrey, East and West Sussex has the fourth highest TDGVA which is explained by the presence of Gatwick airport.

**Figure 20. Tourism direct gross value added in the United Kingdom, 2013**

Top 15 ranked NUTS 2 regions in England and Wales – Scotland and Northern Ireland totals included



Source: UK-TSA 2013 (ONS), ONS IO&SUT 2013, Annual Business Survey 2013; GB Day Visits Survey 2013; GB Tourism Survey 2013; International Passenger Survey 2013.

### *Moving forward the approach adopted*

The approach is recognised within the UK as a robust estimate of the value of tourism at the regional level. It is likely that the estimates will be updated on an annual basis in line with updated TSA estimates for the UK.

### *Lessons taken from the approach adopted*

Caution should be applied to the estimates of visitor expenditure used in this analysis due to relatively small base sizes from the national tourism surveys when looking at sub-regional areas. This is addressed to some extent by using three-year averages, but there is still a degree of variance that is likely in estimates at this level.

### *Relevance to other countries and transferability*

This initiative has extended the reconciliation of the demand and supply sides of tourism to the NUTS 2 and 3 levels and the analysis reveals the relative importance of tourism in particular areas. In countries with access to regional level demand estimates and regional GVA estimates by industry the methodology offers the potential for transferability.

***For more information***

Contact – The Office for national statistics of the United Kingdom

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