Tourism Data Collection
An analysis at subnational level in Iceland

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Tourism in Iceland has grown rapidly over the last decade. The number of foreign visitors in the country has more than doubled during that period and tourism has acquired increased recognition as a central pillar of the national economy. The rising importance of tourism in the economy calls for a thorough and systematic assembling of tourism statistics in order to regulate and organise the industry. The need for tourism statistics is not only required by the National Tourism Administrations (NTAs), but also by various groups of interest, such as municipalities holding the planning authority, governmental institutions responsible for policy making and infrastructure development as well as business investors seeking investment opportunities. Tourism has to be measured at a destination as well as en route and the generation of tourism in areas of origin has to be examined (UNWTO, 1999). Common language, international definitions and methods are indispensable in this matter as they enable global comparison of data and understanding of the scope of the industry at each place (Eurostat, 2012; UNWTO, 1999).

This paper presents the results from a study on the availability of tourism data at regional level in Iceland, based on the existing international methodological framework and its applicability for regional tourism management (Rögnvaldsdóttir, 2014).

Tourism at subnational level in Europe

The European Union has introduced a legal framework for the territorial division of EU, EFTA and candidate countries in order to harmonise the collection, transmission and publication of national and EU statistics. The Nomenclature of Units for Territorial Statistics (NUTS) is a geocode standard for referencing the subdivisions of countries for statistical purposes. A hierarchy of three NUTS levels is established followed by two levels of local administrative units (LAUs) (table 1) (European Union, n.d.; Eurostat, n.d.a.).

Table 1. NUTS and LAUs in Europe (European Commission, 2003)

<table>
<thead>
<tr>
<th>Level</th>
<th>Minimum population</th>
<th>Maximum population</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTS1</td>
<td>3 million</td>
<td>7 million</td>
</tr>
<tr>
<td>NUTS2</td>
<td>800,000</td>
<td>3 million</td>
</tr>
<tr>
<td>NUTS3</td>
<td>150,000</td>
<td>800,000</td>
</tr>
<tr>
<td>LAU1</td>
<td>Regions, districts, counties, municipalities</td>
<td></td>
</tr>
<tr>
<td>LAU2</td>
<td>Municipalities, cities, communes, councils</td>
<td></td>
</tr>
</tbody>
</table>

Eurostat presented a change in European tourism statistics in 2012. With the adoption of “Regulation of the European Parliament and of the Council concerning European statistics on tourism” (EU) 692/2011) a base has been created for the collection of regional tourism statistics where regional data shall be at the NUTS2
level. As a consequence and as can be gleaned from table 1, small nations like Iceland will have limited territorial division as the total population of the country is below the NUTS2 minimum population (European Union, 2011; Eurostat, 2014a).

Territorial units in Iceland

Iceland is one of the most sparsely populated countries in the world, making the implementation of a proper statistical territorial division in the country problematic. The imbalanced population by regions encumbers statistical work and comparisons between regions (Harðarson and Sindradóttir, 2012; Sverrisson and Hannesson, n.d.).

The statistical territories in Iceland are classified as in table 2.

Table 2. NUTS and LAUs in Iceland (European Union, n.d., Icelandic Association of Local Authorities, n.d.)

<table>
<thead>
<tr>
<th>Level</th>
<th>Iceland</th>
<th>Number of entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTS1</td>
<td>IS0 Iceland</td>
<td>1</td>
</tr>
<tr>
<td>NUTS2</td>
<td>IS00 Iceland</td>
<td>1</td>
</tr>
<tr>
<td>NUTS3</td>
<td>IS001 Capital Region</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>IS002 Rest of country</td>
<td></td>
</tr>
<tr>
<td>LAU1</td>
<td>Regions in Iceland</td>
<td>8</td>
</tr>
<tr>
<td>LAU2</td>
<td>Municipalities in Iceland</td>
<td>74</td>
</tr>
</tbody>
</table>

There is no territorial division in Iceland on the NUTS1 and NUTS2 level. On the NUTS3 level, there are two partitions, the capital area and the rest of the country. On the LAU1 level, there are eight statistical territorial units in Iceland, as can be seen in figure 1. These regions are mainly used for administrative and statistical purposes and the district court jurisdictions also follow this division. The red lines in figure 1 divide the country up in 74 municipalities which represent the LAU2 level.

Figure 1. Regions of Iceland (Administrative divisions of Iceland, n.d.; Harðarson & Sindradóttir, 2012)
Defining a destination

A destination is difficult to define. The reason is the miscellaneous permutations and implications associated with the term (Wang, 2011). Municipalities or other administrative regions rarely constitute tourism destinations. These are defined based on different criteria such as attraction, amenities and access (Holloway, 2002; Huijbens and Jóhannesson, 2013).

According to UNWTO International Recommendations for Tourism Statistics (IRTS, 2008), the main destination of a tourism trip is:

The place visited that is central to the decision to take the trip. However, if no such place can be identified by the visitor, the main destination is defined as the place where he/she spent most of his/her time during the trip. Again, if no such place can be identified by the visitor, then the main destination is defined as the place that is the farthest from the place of usual residence (United Nations, 2010a, p. 13).

In a report on tourism resource mapping published by the Tourist Board of Iceland (2002), an attempt was made to define the concept of destination. According to this report, a destination is the equivalent of an accessible attraction within a certain distance from tourist services. Five main regions were outlined (capital area and four other areas around the country) and each of them included subregions based on their uniqueness which could be derived from the nature, history, recreation or cultural heritage of the area (figure 2) (Sigurbjarnarson & Gíslason, 2002).

![Figure 2. Tourism resource mapping in Iceland](Source: Sigurbjarnarson and Gíslason, 2002, p.15.)

No matter where the borderlines are drawn with the intention of defining a destination, it can never be clear-cut, as the destination changes continuously with the actions and relations of the visitors and locals, i.e. how and to whom different actors relate and for what reason (Cai, 2002; Huijbens & Jóhannesson, 2013). Defining destinations and demarcating them therefore continues to be a challenge for policy makers, analysts and scholars of tourism.
Regional tourism data availability in Iceland


Inbound tourism

Inbound tourism encompasses the activities of a non-resident visitor in the country of reference on an inbound tourism trip. Expenditures made by these visitors are considered as inbound tourism expenditures and constitute revenue for the destination in question.

Arrivals and other related data

The flow of international visitors includes both tourists (overnight visitors) and same day visitors (excursionists). Arrivals data are attained from sources such as administrative records (e.g. traffic counts and immigration control) as well as visitor surveys and accommodation surveys (United Nations, 2010a; UNWTO, 2014a). Additional counting methods have been used worldwide for gauging tourist numbers such as manual observation and tallying in various places and regions, mechanical and electronic counters such as wired door counters, GPS tracking, road traffic detectors, vehicle and people counters with magnetometers etc. (Ahas, Aasaa, Markb, Paea, and Kull, 2007; Lau & McKercher, 2007; Ólafsson, 2012, 2014; Wolf, Hagenloh. & Croft, 2012).

In Iceland, foreign travellers who pass through the international airport terminal upon departure are counted and registered by 17 nationalities. Visitors arriving at Seyðisfjörður harbour with M/S Norröna are estimated by Austfari and passengers coming to the country through other airports are estimated through figures from the Icelandic Aviation Authorities (ISAVIA) by the Icelandic Tourist Board. The total sum of the above passengers is then published presenting the total number of foreign visitors to Iceland every year. Cruise passengers are not included in these numbers (Frenţ, 2013; Icelandic Tourist Board, n.d.-a., n.d.-b; Óladóttir, 2014).

Through inbound visitor surveys, administered at Keflavík International airport at departure by the ITB, the purpose of visit is queried. Arrivals per mode of transport are quite simple in Iceland as the only possible transport mode is by air or sea. These numbers are counted separately and published by ITB on the national level (Icelandic Tourist Board, 2014a, 2014c).

The numbers of foreign visitors to Iceland are not counted by regions. However, an approximation is provided for by calculating ratios from the inbound visitor surveys conducted by the ITB, as well as from specific surveys conducted by RRF1 with the total numbers of foreign visitors. The ratio of those stating to have visited a specific place in the country is tallied against the total count published by the ITB.

The Icelandic Road and Coastal Administration has counted vehicles on Icelandic roads for about 40 years. There are 185 counting points on the Icelandic road network where traffic numbers are counted all year round. No special tourism numbers have been published yet, but the last comprehensive survey of road users was conducted in 2005 where tourism numbers could be derived from (Icelandic Road and Coastal Administration, n.d.).

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1 Rannsóknir og ráðgjöf ferðafjöðustunnar
New counting methods that use mechanized counters with magnetometers which detect and count vehicles and walkers on an hourly basis are in development in Iceland. These counters have been located in about twenty places around the country (Ólafsson, 2012, 2014). As already stated, no organized regional tourist counting is operated in Iceland today and all numbers rely on estimations from border surveys and other irregular counting methods as mentioned above.

Accommodation statistics
Accommodation statistics are a vital part of the tourism statistics system in the EU and have been collected systematically since 1995 with the establishment of tourism statistics system in Council Directive 95/97/EC (Eurostat, 2014b). Even though accommodation statistics are only relevant for one type of visitors (i.e. overnight visitor) the accommodation sector is one of the core tourism sectors and its economic importance can be gauged in the TSA results from many European countries (Eurostat, 2012).

Statistics Iceland has collected data on the capacity of accommodation establishments in Iceland as well as data on overnight stays since 1984. The accommodation statistics give information on the capacity and occupancy, number of arrivals and overnight stays in accommodation establishments categorised by type of accommodation, region and citizenship of guests (Statistics Iceland, n.d.b.). Accommodation statistics are one of the very few tourism statistics in Iceland that are allocated to regions. The numbers are presented specially for each of the eight regions of Iceland as in figure 2 (Statistics Iceland, n.d.b).

Expenditures
Inbound tourism expenditure is “the tourism expenditure of a non-resident visitor within the economy of reference” (United Nations, 2010a, p. 34). 

*International tourism receipts* (ITR) refer to the earnings generated in destination countries from expenditures by international inbound visitors (UNWTO, 2014b). These expenditures are according to UNWTO International Tourism Statistics Recommendation 2008:

> The amount paid for the acquisition of consumption goods and services, as well as valuables, for own use or to give away, for and during tourism trips. It includes expenditures by visitors themselves, as well as expenses that are paid for or reimbursed by others (United Nations, 2010a, p. 31).

Inbound tourism expenditures in Iceland count in macro-economic terms as exports for Iceland and as imports for the foreign visitor’s country of residence. The receipts from inbound tourism are reported as “travel credit” in the Balance of Payments (BoP), under the services balance while expenditure on outbound tourism as “travel debit” (UNWTO, 2014b). Statistics Iceland and the Central Bank of Iceland have published statistics for external trade in goods and services, balance of payments, and national accounts according to updated international standards in September 2014 (Statistics Iceland, 2014).

In Iceland, inbound expenditures are also measured in the ITB inbound visitor survey at Keflavík Airport. The tourism expenditure categories are in accordance with the the ITRS 2008 recommended categories (Frenţ, 2013; Icelandic Tourist Board, 2014a, United Nations, 2010b, p. 35).

Expenditure data is not divided by regions in these surveys and no expenditure surveys are conducted on a regular basis at the subnational level in Iceland. The Centre for Retail Studies in Iceland has analysed and published foreign credit card turnover by users’ nationalities and Tourism Industry Categories since 2012. These
numbers are published monthly and are an important indicator of tourism expenditure in Iceland (Centre for Retail Studies, 2014). The credit card statistics are only available at the national level, but a further breakdown by regions would be an important source to measure how tourism expenditure is spread around the country.

Domestic tourism

Domestic tourism “comprises the activities of a resident visitor within the country of reference either as part of a domestic tourism trip or part of an outbound tourism trip” (United Nations, 2010a, p. 15).

A survey on Icelanders’ travel patterns has been carried out annually by ITB since April 2009. This survey covers both domestic and outbound tourism (Frent, 2013). The domestic part includes questions on domestic trips such as destinations by regions, time of travel, length of stay, paid attraction and number of excursions (Icelandic Tourist Board, 2014b).

The survey on Icelanders’ travel patterns enables an estimation of the number of visitors at each sub region and paid attraction (Frent, 2013; Icelandic Tourist Board, 2014b). In addition the accommodation statistics include information on the number of arrivals and overnight stays as well as the occupancy and capacity in accommodation establishments at both national and regional level for domestic tourists as well (Statistics Iceland, n.d.-b).

Information on domestic travel therefore remains scarce and for regional statistics, the only retrievable data is on estimated number of visits from the visitor survey and accommodation numbers from Statistics Iceland.

Outbound tourism

Outbound tourism “comprises the activities of a resident visitor outside the country of reference, either as part of an outbound tourism trip or as part of a domestic tourism trip” (United Nations, 2010a, p. 15). Outbound tourism expenditure is “the expenditure of a resident visitor outside the economy of reference” (United Nations, 2010a, p. 34).

As mentioned before, surveys on Icelanders’ travel patterns include both domestic and outbound tourism (Frent, 2013). The outbound tourism part includes questions on tourist trips abroad such as the number of trips, type of trip, destination country and the length of stay, which gives some indication on departures (Icelandic Tourist Board, 2014b). No data is collected on tourism expenditure in this survey, but information on Icelandic credit card turnover in other countries has been used as an indicator for outbound tourism expenditure (Central Bank of Iceland, n.d.).

Tourism industries

Tourism is primarily a demand-defined industry unlike most output-defined industries in the national accounts such as fisheries and manufacturing in the case of Iceland. Tourism statistics need to be disaggregated from various macro-economic aggregates like current accounts or private consumption (Smeral, 2006). Expenditures on travel and tourism cut across many types of industries that do not fit neatly into the Industrial Classification System (Mak, 2004). These different tourism components are unveiled and analysed in the Tourism Satellite Account (TSA). TSA measures the direct economic contributions of tourism consumption to a national economy based on a set of ten interrelated tables which are consistent with the general Supply and Use Tables (SUT) established by countries at the national level to describe the economic balance of goods and services and the production accounts of the producers following the System of National Accounts 1993 (Frechtling, 2010; United Nations, 2010b). Tourism Satellite Accounts have been published in Iceland four times, in 2008, 2010, 2011 and 2015.
Tourism industries are defined as “the activities that typically produce tourism characteristic products” (table 13) (United Nations, 2010a, p. 40).

Tourism industries are also defined in IRTS 2008 as “grouping of those establishments whose main activity is the same tourism characteristic activity. In supply-side statistics, establishments are classified according to their main activity, which is determined by the activity that generates the most value added” (United Nations, 2010b, p. 25).

An establishment is “an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added” (United Nations, 2010b, p. 25).

Tourism characteristic activities generally produce tourism characteristic products. As the industrial origin of a product (in Iceland the ISAT 2008 industry that produces it) is not a measurement for the accumulation of products within a similar Central Product Classification (CPC) category, there is no exact one-to-one relationship between products and the industries producing them as their primary output. Table 3 demonstrates the typology of tourism characteristic consumption products and activities, separately grouped in the 12 corresponding categories to be used in the TSA tables (United Nations, 2010a, 2010b).

Categories 1 to 10 encompass the core for international comparison in terms of International Standard Industry Classification (ISIC) for activities (equivalent to ISIC 2008 in Iceland) and CPC subclasses for products. Categories 11-12 are country specific, whereas category 11 includes tourism characteristic goods for products and the equivalent retail trade activities. Category 12 refers to country-specific tourism characteristic services and other country-specific tourism characteristic activities (United Nations, 2010b).

### Table 3. List of tourism characteristic consumption products and tourism characteristic activities (tourism industries) (United Nations, 2010b, p. 25)

<table>
<thead>
<tr>
<th>Tourism products</th>
<th>Tourism activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Accommodation services for visitors</td>
<td>Accommodation for visitors</td>
</tr>
<tr>
<td>2 Food- and beverage-serving services</td>
<td>Food- and beverage-serving activities</td>
</tr>
<tr>
<td>3 Railway passenger transport services</td>
<td>Railway passenger transport</td>
</tr>
<tr>
<td>4 Road passenger transport services</td>
<td>Road passenger transport</td>
</tr>
<tr>
<td>5 Water passenger transport services</td>
<td>Water passenger transport</td>
</tr>
<tr>
<td>6 Air passenger transport services</td>
<td>Air passenger transport</td>
</tr>
<tr>
<td>7 Transport equipment rental services</td>
<td>Transport equipment rental</td>
</tr>
<tr>
<td>8 Travel agencies and other reservation services</td>
<td>Travel agencies and other reservation services activities</td>
</tr>
<tr>
<td>9 Cultural services</td>
<td>Cultural activities</td>
</tr>
<tr>
<td>10 Sports and recreational services</td>
<td>Sports and recreational activities</td>
</tr>
<tr>
<td>11 Country-specific tourism characteristic goods</td>
<td>Retail trade of country-specific tourism characteristic goods</td>
</tr>
<tr>
<td>12 Country-specific tourism characteristic services</td>
<td>Other country-specific tourism characteristic activities</td>
</tr>
</tbody>
</table>

Each enterprise in Iceland is classified with a five digit classification code in the Icelandic industry classification of activities ISAT 2008. This code enables industry categorisation based on European Union’s NACE Rev2. The system consists of 664 industries whereof tourism is not specially categorized. Therefore, a special list has been made with the codes of all the tourism related industries according to IRTS 2008 enabling the coverage of relevant tourism industries (Statistics Iceland, n.d.-a).
Attention must be paid to the fact that an enterprise list by regions inevitably includes biases in the case of establishments with corporate domicile elsewhere.

Supply and Use Tables (SUT) are a principal factor in the making of Tourism Satellite Accounts. SUT show the interface between demand for goods and services and the supply of these goods and services within the economy of reference.

A limitation of the TSA is that the accounts are mainly descriptive in nature and do not include calculations on the indirect and induced effects of tourism on the economy. Other methods have to be used for that such as Input-Output tables which are derived from the SUTs (United Nations, 2010b). The I-O tables show how much of each product is used as input for the production of other products at the same time as it demonstrates how much of each product is consumed by different user categories. This results in a map of the inter-industry relations in the economy (Eurostat, n.d.-b).

The measurement of tourism economic impact at the national level is a complex process even though it follows the standardized methodological framework of TSA. The measurement of tourism regionally is even more demanding when it is based on the same data sources as the national figures. The Supply and Use Tables are not easily adaptable to regional estimates (Bucellato, Webber, White, Ritchie and Begum, 2010). As an example, the economic turnover from companies with branch offices around a country is usually registered at their corporate domicile, no matter where it derived. This biases the regional numbers from SUT and makes it necessary to seek this information from the region itself. In countries where Regional TSAs have been produced, special regional data sources have been established through Structural Business Statistics (SBS), Annual Business Inquiry (ABI) or similar establishments (Laimer, 2012; Office for National Statistics, 2014).

The number of establishments and non-monetary data for accommodation services is retrievable on the subnational level in Iceland. Information on travel agencies and reservation services is lacking. Tourism industry data on the regional level is therefore scarce as already mentioned before.

Tourism employment statistics

Tourism employment is not estimated on a regular basis in Iceland, but information on employment in hotels, restaurants and transport can be retrieved from the Labour Force Survey of Statistics Iceland by sections. More specified estimations on tourism employment can be found in the Tourism Satellite Accounts (Statistics Iceland, n.d., 2011). Regional tourism data is not retrievable from the Labour Force Survey.

Complementary macroeconomic indicators.

Measuring the travel propensity is a useful measure of the effective demand in tourism as it measures the percentage of a population that actually engages in tourism. Net travel propensity is the percentage of the population that takes at least one tourism trip in a given period of time, indicating what proportion of the population engages in tourism. The gross travel propensity measures the total number of tourism trips taken, as a percentage of the population. By dividing the gross travel propensity by the net travel propensity, an average number of trips taken by people participating in tourism is retrieved, i.e. the travel frequency for the population (Bowen and Clarke, 2009). These numbers are retrievable from the outbound visitor survey by the Icelandic Tourist Board on a NUTS3 level (Icelandic Tourist Board, 2014b).
Conclusion

The aim of this paper has been to map the obtainable tourism data sources in Iceland according to the framework of UNWTO Compendium of Tourism Statistics 2014, and means of linking these to the regional level.

Due to the small population of the country, Iceland has limited scope to regionally divide tourism data for the European Union. However, the statistical territorial division is necessary in order to comprehend the dynamics, contributions and relations constituting the national economy. Statistics Iceland has started to work towards a new regional demarcation of Iceland on these terms.

Tourism data on the regional level in Iceland is lacking and the sole systematic data collection by regions in Iceland is the accommodation statistics by Statistics Iceland. Visitor numbers are not counted on a subnational level and very few regional statistics can be retrieved from the ITB inbound visitor survey. This lack of data makes statistical analysis of tourism at the regional level in Iceland difficult and expensive.

Statistics on domestic and outbound tourism are collected systematically on a national level, but do not allow for a regional breakdown. Tourism statistics on the supply side in Iceland are almost exclusively on the national level. Tourism satellite accounts have been published four times in the country, measuring the contribution of tourism to the national economy. Regional statistics have not been retrievable from the TSAs. The business registry in Iceland lists enterprises by corporate domicile, regardless of the location of business activities, risking sample biases when company lists are retrieved by regions. The same holds true for financial statistics such as enterprise operating accounts by sections from Statistics Iceland and credit card turnover from the Centre for Retail Studies, as the financial numbers are registered by the corporate domicile regardless of their place of origin.

Several countries have developed methods to estimate the economic contribution of tourism at the regional level, based on the framework provided for Tourism Satellite Accounts. Data is collected by an annual business inquire, providing information on regional economic contribution to GDP by industry sectors.

For the time being, systematic measures of regional economic contribution of tourism in Iceland are impossible with the use of secondary data. Primary data has to be obtained in order to comprehend the nature of the industry at each place. In the guideline on sustainable tourism development recently published by the Icelandic Travel Industry Association and the Minister of Industry and Commerce in Iceland, emphasis is on reliable data which show signs of future improvement in that matter.

References


