



# The Economic Benefits of Tourism in Iceland

New developments for the Icelandic Tourism Satellite Account:  
Tourism Gross Fixed Capital Formation and  
Tourism Collective Consumption

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Cover picture: Figures 1 and 4 from the report, representing tourism as a share in the Government Collective Consumption in Iceland and total Tourism Gross Fixed Capital Formation in Iceland by industries in 2012. Cristi Frenț ©.

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**Cristi Frentz**



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# 1. Introduction

In the period 2008-2011, Statistics Iceland published Tourism Satellite Account (TSA) data through three special publications. None of these publications contain data on TSA aggregates such as Tourism Gross Fixed Capital Formation and Tourism Collective Consumption. Until now, these aggregates are not proposed by the international standards for TSA for international comparability. Moreover, their compilation is recommended only in an advanced stage of the TSA implementation at a national level.

Nevertheless, it should be considered that these aggregates provide valuable information about the value of investments in tourism (Tourism Gross Fixed Capital Formation) and expenditure made by government to support tourism by providing collective services (Tourism Collective Consumption). In fact, the macroeconomic importance of tourism would not be complete if these aggregates were not estimated.

The aim of this study is to investigate the possibilities of developing new TSA aggregates for Iceland, namely Tourism Gross Fixed Capital Formation and Tourism Collective Consumption. These two aggregates will further allow the calculation of the “Total Tourism Demand” proposed by international standards. Total Tourism Demand is in fact a sum between Tourism Gross Fixed Capital Formation, Tourism Collective Consumption and Internal Tourism Consumption, the last being the core TSA aggregate which has been calculated in the former TSA compilations for Iceland.

This study is divided into four sections. The first section (ch. 2) is a theoretical presentation of the concepts and methodological issues related to Tourism Gross Fixed Capital Formation and Tourism Collective Consumption. The main reference is obviously Tourism Satellite Account: Recommended Methodological Framework (TSA:RMF, 2008), one of the two international standards in tourism statistics.

The second section (ch. 3) deals with international experience in compiling these two TSA aggregates. The focus is mostly on presenting the European countries’ practices in this field. Nevertheless, the experience of other non-European countries will also be envisaged and might be considered relevant for Iceland as well. Although the focus is on some general methodological issues applied by countries carrying out such exercises, some TSA country figures will also be presented.

In the third section (ch. 4) an experimental exercise for compiling these TSA aggregates for Iceland is presented. The starting point of this endeavour is analysing the existing situation in the Icelandic National Accounts. Then, a proposed compilation procedure is described in order allow the experimental calculation of both Tourism Gross Fixed Capital Formation and Tourism Collective Consumption for Iceland. Further, the final figures will be presented within the related TSA tables. At the end the presentation of further research in this field is also included.

Finally, the last section is devoted to some conclusions for this study.

In this study an approach for developing new aggregates in the future TSA compilations in Iceland is proposed. These might be considered by Statistics Iceland and can be regarded as a starting point for the future enhancements of the Icelandic TSA system. If needed, further improvements can also be added if new data sources will be available in the future.

However, the results in this study under no circumstances represent final official data but rather an initial framework to start building a complete TSA for Iceland. The main belief is that the future official TSA publications for Iceland compiled by Statistics Iceland might adopt and/or improve the proposed methodology within this study. Therefore, the tourism sector in Iceland would have more key figures (now related to investments and governmental consumption for collective services) to prove its macroeconomic importance.

## 2. Theoretical background

This section will present the concepts and definitions pertaining to the theoretical framework related to Tourism Gross Fixed Capital Formation and Tourism Collective Consumption. Practically, the section will present the main guidelines as recommended by the international standards (both TSA:RMF(2008) and in some case also SNA (2008)). Moreover, some author's proposals will be added to this theoretical framework reflecting the need to expand the existing provisions in this field.

### 2.1. The methodological framework proposed by TSA:RMF (2008)

#### 2.1.1. Tourism Gross Fixed Capital Formation

Before understanding how Tourism Gross Fixed Capital Formation (TGFCF) is defined it is important to explain the concept of Gross Fixed Capital Formation (GFCF) from the National Accounts perspective.

Some economists identify Gross Fixed Capital Formation (GFCF) with investments. This is not very precise as investments might refer also to financial investment which is not part of GFCF (OECD, 2006). So, one might say that GFCF is a specific terminology used by National Accountants in case of investments (excepting financial investments). However, for the purpose of using National Accounts terminology, this report will refer to GFCF instead of investments.

Nevertheless, it is important from the very beginning to clarify all the terminology related to GFCF:

*In the national accounts, investment, i.e. the purchase of machinery (including software) and buildings (offices, infrastructure, dwellings) and the constitution of stocks (inventories) is known as gross capital formation. When stock-building (or "changes in inventories") is excluded, leaving only the purchase of buildings and machinery, the results is known as gross fixed capital formation. These variable measures total expenditures on products intended to be used for future production. These types of products are collective known as "fixed capital" ... finally, the word "gross" indicates that the expenditure is measured without deducting the consumption of fixed capital (OECD, 2006, pp. 23-24).*

Thus GFCF is defined as:

*total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non-produced assets (SNA, 2008, para. 10.32).*

It should be understood that in a similar manner with intermediate consumption, GFCF refers only to “institutional units in their capacity as producers” (SNA, 2008, para. 1.52). Although the largest component of GFCF refers to the business sector, GFCF also refers to households (in case of purchase of dwellings) and GFCF of government which includes mainly road infrastructure but also office buildings, schools, hospitals etc. (OECD, 2006).

Another concept derived from the definition of GFCF is that of fixed assets which are in fact:

*produced assets (such as machinery, equipment, buildings or other structures) that are used repeatedly or continuously in production over several accounting periods (more than one year)* (SNA, 2008, para. 1.52).

So one can see there are two categories of assets: produced assets and non-produced assets. Both of them are part of non-financial assets and are further defined as it follows:

*Produced assets are non-financial assets that have come into existence as outputs from production processes that fall within the production boundary of the SNA.*

*Non-produced assets are non-financial assets that have come into existence in ways other than through processes of production* (SNA, 2008, para. 10.9).

In accordance with SNA (2008) there are three main types of Produced assets: “Fixed assets”, “Inventories” and “Valuables”. In this categorization fixed assets and inventories are considered assets that are held only by producers for purposes of production while valuables may be held by any institutional unit and are primarily held as stores of value (SNA, 2008, para. 10.10). At the same time, Non-produced assets are made up of three categories: “Natural resources”; “Contracts, leases and licences”; and “Purchased goodwill and marketing assets”. (SNA, 2008, para. 10.14). Regarding the first category, it is important to mention that this is not part of GFCF:

*The national accounts also record transactions in non-produced assets such as land, primary forests and oil and mineral reserves. These non-produced assets are included in the balance sheet accounts but are not included in GFCF<sup>1</sup> because they have been produced by nature and not by human activity. Nature is not a producer in the eyes of national accounts* (OECD, 2006, pp. 132-133).

Returning to tourism issues, TSA:RMF (2008) proposes both the concept of Tourism Gross Fixed Capital Formation (TGFCF) and Gross Fixed Capital Formation of Tourism Industries (GFCFTI). It should be noted that these are different concepts. Actually, TGFCF is more encompassing than GFCFTI comprising both GFCFTI and the “net acquisition of tourism-specific capital goods by all other industries” (TSA:RMF, 2008, para. 4.70)

In fact, three main categories of “tourism driven investment” are proposed by TSA:RMF (2008): “Tourism-specific fixed assets”, “Investment by the tourism industries in non-tourism-specific fixed assets” and “Tourism-related infrastructure” (TSA:RMF, 2008, para. 2.46).

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<sup>1</sup> In other words, the value of land on which dwellings or other buildings are situated is not included in GFCF!

It is stated that tourism-specific assets are:

*used exclusively or almost exclusively in the production of tourism characteristic goods and services. If tourism did not exist, such assets would be of little value as they could not easily converted in non-tourism tourism applications. (TSA:RMF, 2008, para. 2.47)*

TSA:RMF (2008) presents a list of such assets which is stated to be “consistent with the classification of tangible produced fixed assets used in the System of National Accounts 2008” (TSA:RMF, 2008 para. 2.48) (see table 1). Mainly, there are five categories proposed out of which three categories are further classified in subcategories. An explanation of each subcategory/category is found in Annex 2.

**Table 1:** Classification of tourism-specific fixed assets according to TSA:RMF (2008).

Source: TSA:RMF, 2008, p. 98

No.	Categories	No.	Subcategories
1.	<b>Accommodation for visitors</b>	1.1.	Hotels and other accommodation facilities for visitors
		1.2.	Vacation homes under full ownership
		1.3.	Vacation homes under other types of ownership
2.	<b>Other non-residential buildings and structures proper to tourism industries</b>	2.1.	Restaurants and similar buildings for food-and beverage-serving services
		2.2.	Buildings and infrastructure for the long distance transport of passengers
		2.3.	Buildings for cultural and similar services mainly for use by visitors
		2.4.	Facilities for sport, recreation and entertainment
		2.5.	Other facilities and structures
3.	<b>Passenger transport equipment for tourism purposes</b>	3.1.	Land (including road and rail)
		3.2.	Sea
		3.3.	Air
4.	<b>Other machinery and equipment specialized for the production of tourism characteristic products</b>		<i>Not provided by TSA:RMF (2008)</i>
5.	<b>Improvements of land used for tourism purposes</b>		<i>Not provided by TSA:RMF (2008)</i>

Regarding the category of “Investment by the tourism industries in non-tourism-specific fixed assets” this is considered tourism related not “because of the nature of assets themselves, but because of the use which is made of them by a tourism industry” (TSA:RMF, 2008, para. 2.49). Laundry facility in a hotel is an example which falls within this category. Recognizing that at present there is a diversity of assets which can be part of this category, TSA:RMF (2008) does not make any recommendation to classify these assets but encourages countries “when feasible, to identify some specific classes of such assets that might be significant in their economy” (TSA:RMF, 2008, para. 2.49).

Only the categories of “Tourism-specific fixed assets” and “Investment by the tourism industries in non-tourism-specific fixed assets” are included in TSA:RMF (2008) table 8. The category of “Tourism-related infrastructure” is not yet included in the TSA:RFM (2008) table

8, because of the “difficulties in identifying elements of tourism investments” (TSA:RMF, 2008, para. 2.54). Despite this, TSA:RMF (2008) encourages countries to work on this issue and to include “tourism-related infrastructure” to TGFCF:

*Countries that are able to estimate all or part of it are encouraged to include it as an additional category* (TSA:RMF, 2008, para. 4.70).

It is considered that tourism-related infrastructure either has been developed for a touristic purpose or tourism was not necessarily the main purpose of investment (TSA:RMF, 2008, para. 2.50). Anyway, in the category of “Tourism-related infrastructure”, three cases were identified by World Tourism Organization (WTO, 2000, p. 73):

- (1) The asset might have been produced or acquired with the purpose of being used exclusively or principally by visitors, such as development of areas specifically for tourism purposes;
- (2) At the time the investment was made, it might have been done with the view of its exclusive or principal use by visitors at a given point in time (e.g. investments for a special event such as the Olympic Games, an important international meeting, etc.), but a later non-tourism use is taken into consideration in the decision making process for this investment;
- (3) It might be directed generally to all activities and also favour tourism (e.g. an airport open to all type of traffic, a non-toll road, a hospital in an area visited by visitors), because in its absence tourism would probably be of a lesser intensity.

Nevertheless, in each case the public sector has the responsibility to put in place this “tourism-related infrastructure” in order to facilitate tourism development. In addition, the measurement of “tourism-related infrastructure” can be further complicated specially in the case of basic infrastructure which tourism is a beneficiary of and where “the process of identification and allocation to tourism might present more theoretical and practical difficulties” (WTO, 2000, p. 74).

To summarize TSA:RMF (2008) proposes that the TGFCF is calculated as a sum between Gross Fixed Capital Formation of Tourism Industries (both for tourism-specific fixed assets and for other non-tourism-specific produced assets) and Gross Fixed Capital Formation of other industries only for tourism-specific fixed assets (see table 2).

**Table 2:** Highlighting the Tourism Gross Fixed Capital Formation.

Types of assets	Gross Fixed Capital Formation as part of	
	Tourism industries	Other industries
Tourism-specific fixed assets		
Non-tourism-specific produced assets		

Note: the shaded area is representing Tourism Gross Fixed Capital Formation

It is important to note that TGFCF refers to produced fixed assets operated by resident operators. Excepting vacation homes, it would exclude the assets operated within the economic territory by non-residents (e.g. aircrafts, cruise ships) (TSA:RMF, 2008, para. 2.55).

In addition, TSA:RMF (2008) table 8 proposes also a “memorandum item” to include “non-produced tangible and intangible assets” because “these assets could represent an important component of non-financial tourism investment” (TSA:RMF, 2008, para. 4.71). Further, another encouragement is stated by TSA:RMF (2008):

*If possible, countries are encouraged to differentiate between tourism non-produced tangible assets (comprising land for construction of tourism buildings and structures, and land for public and private recreation) and tourism non-produced intangible assets (comprising licensing rights, leasing agreements and other transferable contracts and acquired goodwill) (TSA:RMF, 2008, para. 4.71).*

At the same time caution should be made as “non-produced tangible and intangible assets” are not part of GFCF according to SNA (2008). This could be seen as problematic in the author’s opinion and this “memorandum item” might not be considered very important by some countries due to some practical measurement difficulties which might occur.

Simultaneously it should be mentioned that consumer durables (e.g. purchasing of cars) are not treated as fixed assets (SNA, 2008, para. 10.34). Therefore, neither the acquisition of tourism single-purpose consumer durable is considered GFCF. This is part of the tourism consumption concept.

It should be remembered that acquisition of vacation homes (both by residents and non-residents) is part of tourism gross fixed capital formation. Also, major repairs and maintenance related to these vacation homes are part of tourism gross fixed capital formation. (TSA:RMF, 2008, para. 2.28 (e)). From a supply side perspective, these are part of the ISIC Rev 4. industry 6810 “Real estate activity with owned and leased property”.

In any cases, for approaching GFCF there is a strict condition for data from National Accounts:

*The extension of the specific work to be done in the area of tourism gross fixed capital formation depends on the level of advance of the national accounts of the compiling country and the level of detail and consistency in which gross fixed capital formation by products and activities is already established within this framework (WTO, 2000, p. 110).*

## 2.1.2. Tourism Collective Consumption

Like in the case of Tourism Gross Fixed Capital Formation, for a better understanding of the Tourism Collective Consumption concept, it is necessary to define what collective consumption is.

In the national accounts terminology, as an institutional sector, the government generically called “general government” has the responsibility to “produce services (and possibly goods) for individual or collective consumption mainly on a non-market basis and redistribute income and wealth” (SNA, 2008, para. 2.17). More precisely, a collective consumption service is defined as:

*a service provided simultaneously to all members of the community or to all members of a particular section of the community, such as all households living in a particular region. Collective services are automatically acquired and consumed by all members of the community, or section of the community, without any action on their part ... by their nature, collective services cannot be sold to individuals on a market, and they are financed by government units out of taxation or other revenues (SNA, 2008, para. 9.4).*

Examples of such services are “the provision of security and defence, the maintenance of law and order, legislation and regulation, the maintenance of public health, the protection of the environment etc.” (SNA, 2008, para. 9.97). One can add also, “research and development and infrastructure and economic development” (Eurostat, 2009b, p. 64).

Evidently, the provision of individual services by the government is part of the collective consumption concept. In the TSA these are already covered by the so called “social transfer in kind” and included in the internal tourism consumption concept; this is because in the national accounts the government expenditure for individual consumption is considered as transfers in kind. However, the distinction between individual and collective government expenditure is fundamental. In this regard the “Classification of the functions of the Government” (COFOG) is used where collective services are clearly identified (see: SNA, 2008, para. 9.99-9.100).

Returning to tourism issues, collective consumption of the general government would include provision of legislation and regulatory framework for tourism or related to tourism (i.e. cultural heritage), tourism promotion, security and public order in the places visited by tourists, cleaning services of beaches, ski resorts or other areas visited by tourists and the production of tourism statistics.

Nevertheless, tourism promotion can be considered a special case when there is a public-private partnership involved and the private sector provides part or all the funds required. In this case, one cannot consider it as “a collective non-market service but as a service provided by a market producer (which might receive support from general government under the form of a current transfer) and are considered as an intermediate consumption of the private sector” (TSA:RMF, 2008, p. 20).



At the same time, it is important to mention that services provided by national parks and museums are excluded since they are considered individual non-market services and already included in tourism consumption as social transfer in kind. This is because “their beneficiaries can be identified separately” (TSA:RMF, 2008, para. 4.73).

There is no definition of Tourism Collective Consumption in TSA:RMF (2008) but an earlier publication of the World Tourism Organization (WTO, 2000) did present an important clarification:

*Tourism collective consumption is comprised of those collective non-market services which unambiguously benefit visitors and/or those activities that serve them directly (i.e., the tourism industries) (p. 74).*

Tourism Collective Consumption is found in the TSA:RMF (2008) table 9 entitled “Tourism collective consumption, by product and level of government”. In this table the rows are in fact “a proposed list of non-market services that are to be considered as tourism collective non-market services in terms of the corresponding CPC subclasses” (TSA:RMF, 2008, para. 4.72). Some of these services can be considered entirely related to tourism (e.g. tourism promotion) while others are only partly related to tourism (see table 3). It is specifically mentioned by TSA:RMF (2008) that “countries are encouraged to increase this list with further proposals” (TSA:RMF, 2008, p. 100).

**Table 3:** The proposed classification of Tourism Collective Consumption according to CPC classification in TSA:RMF (2008).  
Source: TSA:RMF, 2008, p. 100

CPC code	Name of products
85561	Tourism promotion services
85562	Visitor information services
91135	Public administrative services related to the distributive and catering trades, hotels and restaurants
91136	Public administrative services related to tourism affairs
<b>Part of</b>	
83700	Market research and public opinion polling services
91260	Police and fire protection services
92919	Other education and training services, n.e.c. <sup>2</sup>
92920	Education support services

In addition to the classification of products, a classification by levels of government is also proposed within TSA:RMF (2008) table 9 as three separate columns for each of the CPC subclasses of table 3. Three levels are suggested: national, regional and local. TSA:RMF (2008) also comprises a supplementary column, in fact a “memorandum item”, entitled “Intermediate consumption by the tourism industries” (TSA:RMF, 2008, p. 70).

The principle of recording used by National Accounts in the case of collective services should also be followed. It should be remembered that there are differences between the principle of

<sup>2</sup> The abbreviation comes from Not Elsewhere Classified (NEC)

recording in public finance and the one used by National Accounts (WTO, 2000). In the case of collective non-market services, by convention the value of consumption is equal with the value of production (TSA:RMF, 2008, para. 4.111).

## 2.2. Beyond TSA:RMF (2008)

The purpose of this section is to advance from TSA:RMF (2008). Three approaches are proposed which should be seen separately yet complementary. They refer to the presentation of TGFCF according to the CPC ver. 2 classification, identification of other non-market collective services and the usage of Classification of the Functions of the Government (COFOG) classification for tourism collective consumption.

### 2.2.1. Tourism Gross Fixed Capital Formation defined as CPC ver. 2

One must admit that defining Tourism Gross Fixed Capital Formation (TGFCF) in terms of CPC ver. 2 is not as easy as it might seem. If in the case of tourism consumption some CPC categories might be considered very specific for tourism and are very easily identifiable from CPC ver. 2 classification (e.g. accommodation, travel agencies etc.), in the case of TGFCF there are no specific elements to be distinctly found in CPC ver. 2.

However, SNA (2008) presents in the capital account a classification of fixed assets (see: SNA, 2008, p. 203). More precisely, a detailed classification of GFCF by types of assets is provided along with explanations for each category included (see: SNA, 2008, para. 10.68 - 10.117). In these explanations SNA (2008) also provides “examples” of products defined as CPC ver. 2 subclasses (see table 4). At the same time, SNA (2008) provides these “examples” only for some types of assets and not for all of them (see table 4).

**Table 4:** Classification of fixed assets in the capital account and the related examples from CPC Rev. 2 according with SNA (2008).

Source: SNA, 2008, pp. 202-207

Type of asset	Examples in CPC Rev. 2
<b>Dwellings</b>	5311 Residential buildings Part of 387 Prefabricated buildings
<b>Other buildings and structures</b>	
Buildings other than dwellings	5312 Non-residential buildings
Other structures	532 Civil engineering works
Land improvements	(*)
<b>Machinery and equipment</b>	
Transport equipment	49 Transport equipment
ICT equipment	452 Computing machinery and part and accessories thereof 472 Television and radio transmitters; television, video and digital cameras; telephone sets
Other machinery and equipment	(These should not have been identified previously as parts of other categories)

Type of asset	Examples in CPC Rev. 2
	43 General-purpose machinery 44 Special-purpose machinery 45 Office, accounting and computing machinery 46 Electrical machinery and apparatus 47 Radio, television and communication equipment and apparatus 48 Medical appliances, precision and optical instruments, watches and clocks 337 Fuel elements (cartridges), for or of nuclear reactors 381 Furniture 383 Musical instruments 384 Sports goods 423 Steam generators, (except central heating boilers) and parts thereof
<b>Weapons systems</b>	(*)
<b>Cultivated biological resources</b>	(*)
Animal resources yielding repeat products	(*)
Tree, crop and plant resources yielding repeat products	(*)
<b>Costs of ownership transfer on non-produced assets</b>	(*)
<b>Intellectual property products</b>	(*)
Research and development	(*)
Mineral exploration and evaluation	(*)
Computer software and databases	(*)
Computer software	(*)
Databases	(*)
Entertainment, literary or artistic originals	(*)
Other intellectual property products	(*)

(\*) no CPC Rev. 2 classes proposed by SNA (2008)

It is important to mention that the categories of Dwellings, Other buildings and structures, Machinery and equipment, Weapons systems and Cultivated biological resources are considered tangible assets while the rest of the categories (intellectual property products and cost of ownership transfer on non-produced assets) are considered intangible assets (SNA, 2008, para. 10.67). This is despite the fact that SNA “does not formally include a division between tangible and intangible assets (SNA, 2008, para. 10.67).

As previously shown (see: 2.1.1) TSA:RMF (2008) proposes a list of so-called tourism-specific fixed assets. Given the fact that SNA (2008) also provides its classification of fixed assets along with some corresponding CPC ver. 2 codes (see table 4), a bridge table between TSA:RMF (2008) and SNA (2008) can be consequently established (see table 5).

Moreover, while recognizing the difficulty of such endeavour (i.e. TGFCF defined as CPC ver. 2 categories), TSA:RMF (2008) encourages countries to do so:

*At the international level, it is difficult to enter in the detail of different CPC Version 2, items that could correspond to each of the categories that are proposed here. But countries are encouraged, when compiling the table on tourism gross fixed capital formation, to present the detailed CPC, Version 2, categories that are included, when possible (TSA:RMF, 2008, p. 98).*

**Table 5:** Correspondence table between Tourism-specific fixed assets and SNA 2008 classification of GFCF by types of assets and the corresponding CPC ver. 2 classification.  
Source: TSA:RMF, 2008, pp. 98-99, SNA, 2008, pp. 202-207 and United Nations Statistical Division, 2014c

No.	Tourism-specific fixed assets (TSA:RMF, 2008)	Corresponding fixed assets from the capital account – classification of fixed assets (SNA, 2008)	Corresponding CPC Ver. 2 code (part of)
<b>1.</b>	<b>Accommodation for visitors</b>		
1.1.	Hotels and other accommodation facilities for visitors	<b>Other buildings and structures</b> Buildings other than dwellings	53129 Other non-residential buildings (i.e. hotels, motels, inns, hostels and similar buildings)
1.2.	Vacation homes under full ownership	Dwellings	5311 Residential buildings 3870 Prefabricated buildings
1.3.	Vacation homes under other types of ownership	Dwellings	5311 Residential buildings 3870 Prefabricated buildings
<b>2.</b>	<b>Other non-residential buildings and structures proper to tourism industries</b>		
2.1.	Restaurants and similar buildings for food-and beverage-serving services	<b>Other buildings and structures</b> Buildings other than dwellings	53129 Other non-residential buildings (i.e. restaurants)
2.2.	Buildings and infrastructure for the long distance transport of passengers	<b>Other buildings and structures</b> Buildings other than dwellings  Other structures	53122 Commercial buildings (only for passenger terminals) 5321 Highways (except elevated highways), streets and roads 5322 Bridges, elevated highways and tunnels 53232 Harbours, waterways and related facilities
2.3.	Buildings for cultural and similar services mainly for use by visitors	<b>Other buildings and structures</b> Buildings other than dwellings	53129 Other non-residential buildings (i.e. cinemas, theatres, concert halls)
2.4.	Facilities for sport, recreation and entertainment	<b>Other buildings and structures</b> Buildings other than dwellings  Other structures	53129 Other non-residential buildings (only indoor sports and recreation installations) 53270 Outdoor sport and recreation facilities
2.5.	Other facilities and structures	<b>Other buildings and structures</b> Buildings other than dwellings	53122 Commercial building (i.e. for shopping malls, exhibition halls)
<b>3.</b>	<b>Passenger transport equipment for tourism purposes</b>		
3.1.	Land (including road and rail)	<b>Machinery and equipment</b> Transport equipment	49113 Motor cars and other motor vehicles principally designed for the transport of persons 49116 Motor vehicles, for the transport of persons, specially designed for travelling on snow; golf cars and similar vehicles 49222 Trailer and semi-trailers of the

No.	Tourism-specific fixed assets (TSA:RMF, 2008)	Corresponding fixed assets from the capital account – classification of fixed assets (SNA, 2008)	Corresponding CPC Ver. 2 code (part of)
			caravan type, for housing or camping 495 Railway and tramway locomotives and rolling stock, and parts thereof 4991 Motorcycles and side-cars 49921 Bicycles and other cycles, not motorized
3.2.	Sea	Transport equipment	49311 Cruise ships, excursion boats and similar vessels, principally designed for the transport of persons; ferry boats of all kinds 494 Pleasure and sporting boats
3.3.	Air	Transport equipment	4961 Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft 4962 Aeroplanes and helicopters
4.	<b>Other machinery and equipment specialized for the production of tourism characteristic products</b>	<b>Machinery and equipment</b> Other machinery and equipment	43 General-purpose machinery 44 Special purpose machinery 45 Office, accounting and computing equipment 46 Electrical machinery and apparatus 47 Radio, television and communication equipment and apparatus 48 Medical appliances, precision and optical instruments, watches and clocks 381 Furniture 383 Musical instruments 384 Sport goods
5.	<b>Improvements of land used for tourism purposes</b>	<b>Other buildings and structures</b> Land improvements	54320* Site formation and clearance services

Overall, one can see that the classification of tourism-specific fixed assets is consistent only with tangible produced assets, in fact with only three types of assets (derived from the classification of fixed assets from SNA (2008)): Dwellings, Other buildings and structures and Machinery and equipment (see also table4). Intangible assets, more precisely intellectual property rights (e.g. hotel software) are not included in the tourism-specific assets category but can be considered part of the residual category “Investments by the tourism industries in other non-tourism-specific produced assets.”<sup>3</sup> It is important to specify that intellectual

<sup>3</sup> Maybe the category of “Computer software and databases” from capital account should be treated more preferentially in case of tourism industries. There is specific software (such as hotel reservation systems, cruise reservations, ticketing reservation for travel agencies) which are without any doubt 100% related to tourism. The author suggests that in the future these might be included within “tourism-specific fixed assets category” as a new category entitled “Computer software and databases specific for tourism industries”. By doing this a different application of Information and Communication Technologies (ICT) for specific tourism industry will be clearly highlighted.

property rights are considered fixed assets and are implicitly produced assets (SNA, 2008, para. 10.11).

One comment should be made regarding the composition of some tourism specific fixed assets in terms of CPC ver. 2 classification. A great heterogeneity is seen for the category “Other machinery and equipment specialized for the production of tourism characteristic products” while for some others (e.g. vacation homes, passenger transport equipment) there are specific CPC class/subclasses.

At the same time, in many cases there are more than one tourism-specific asset that corresponds to the same CPC category (e.g. hotel, restaurants, facilities for sport and recreation). Consequently, a new form of presenting correspondences can be made by firstly presenting the SNA (2008) categorization of fixed assets with the CPC ver. 2 related products and what are the tourism-specific assets included (see Annex 3). This is in fact a reordering of table 5 presented above.

One must admit that the advantage of this new correspondence (from Annex 3) is the fact that it allows greater integration with National Accounts data. Actually, some of the categories of fixed assets as defined by SNA are related to each component of TGFCG and thus only a part of each fixed asset (from SNA (2008)) is attributable to TGFCF. Moreover, it allows identification at CPC ver. 2 level.

Going further, one can propose a new classification of tourism-specific assets which allows a greater integration both with SNA (2008) and CPC ver. 2 (see table 6). Some categories of fixed assets were renamed to better reflect their connection with the classification of types of assets from SNA (2008). At the same time, the new categories have been defined exclusively by CPC ver. 2 code (actually in most cases a part of that CPC code). However, the major disadvantage is the fact that in some cases there is a greater aggregation, for instance in the CPC ver. 2 code “Other non-residential buildings” which includes hotels, restaurant, cinemas, theatres, museums, indoor sports and recreation facilities. However, if countries can distinguish between these types of assets, a further disaggregation would be possible.

**Table 6:** A new proposed classification of tourism-specific fixed assets following CPC ver. 2 products and a better integration with the classification of assets from National Accounts.

New categories of tourism fixed assets proposed	CPC ver. 2 code	CPC ver. 2 name	SNA (2008) classification by types of assets
1. Dwellings – vacation homes	5311*	Residential buildings	Dwellings
	3870*	Prefabricated buildings	
2. Buildings for tourism industries	53129*	Other non-residential buildings	Other buildings and structures – Building other than dwellings & Other structures
	53122*	Commercial buildings ( <i>in this case it includes only passenger terminals</i> )	
3. Structures mostly related tourism	53270*	Outdoor sport and recreation facilities	
4. Passenger transport equipment mostly related to tourism	49222	Trailers and semi-trailers of the caravan type, for housing or camping	
	49311	Cruise ships, excursion boats and similar vessels, principally designed for the transport of	

<b>New categories of tourism fixed assets proposed</b>	<b>CPC ver. 2 code</b>	<b>CPC ver. 2 name</b>	<b>SNA (2008) classification by types of assets</b>
		persons; ferry boats of all kinds	Machinery and equipment – Transport equipment
	494	Pleasure and sporting boats	
	49116	Motor vehicles, for the transport of persons, specially designed for travelling on snow; golf cars and similar vehicles	
5. Other passenger transport equipment	49113*	Motor cars and other motor vehicles principally designed for the transport of persons (except public-transport type vehicles, vehicles specially designed for travelling on snow, and golf cars and similar vehicles	Machinery and equipment – Transport equipment
	495*	Railway and tramway locomotives and rolling stock, and parts thereof	
	4991*	Motorcycles and side-cars	
	49921*	Bicycles and other cycles, not motorized	
	4961*	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	
	4962*	Aeroplanes and helicopters	
6. Equipment mostly related to tourism	384*	Sport goods	Machinery and equipment – Other machinery and equipment
7. Civil engineering works used by tourism	5321*	Highways (except elevated highways), streets and roads, railways and airfield runways	Other buildings and structures – Other structures
	5322*	Bridges, elevated highways and tunnels	
	53232 *	Harbours, waterways and related facilities	
8. Other machinery and equipment used to supply goods and services to visitors	43*	General-purpose machinery	Machinery and equipment - ICT equipment & Other machinery and equipment
	44*	Special purpose machinery	
	45*	Office, accounting and computing equipment	
	46*	Electrical machinery and apparatus	
	47*	Radio, television and communication equipment and apparatus	
	48*	Medical appliances, precision and optical instruments, watches and clocks	
	381*	Furniture	
	383*	Musical instruments	
9. Land improvements for tourism	54320*	Site formation and clearance services	Other buildings and structures – Land improvements

\* - part of

Note: the shaded area designates categories which are difficult to be allocated to tourism

The above classification introduces a sort of fine-tuning with three categories being named as “mostly related to tourism”: “Structures mostly related to tourism”, “Equipment mostly related to tourism” and “Passenger transport mostly related to tourism”. The assumption behind them is that they are more related to tourism consumption. Together with the categories of “Dwellings-Vacation homes” and “Buildings for tourism industries” they can form a sort of “core classification” very close to tourism. To some extent, the category of “Other passenger transport equipment” can also join this classification, if passenger transportation can be distinctly identified.

At the same time three categories are difficult to allocate to tourism: “Civil engineering works used by tourism”, “Other machinery and equipment used to supply goods and services to visitors” and “Land improvements for tourism”. This is a domain where further research is indeed necessary. However, their importance for tourism shouldn’t be neglected.

### **2.2.2. More non-market collective services defined as CPC ver. 2**

Proposing more non-market collective services in tourism is particularly encouraged by TSA:RMF (2008) which, when referring to the classification of tourism collective consumption following CPC ver. 2 states that “countries are encouraged to increase this list with further proposals” (TSA:RMF, 2008, p. 100).

In addition to the list of products proposed by TSA:RMF (2008) for detailing Tourism Collective Consumption the author also proposes other services that can represent collective consumption in tourism. Broadly, these refer to research and development for tourism, production of tourism statistics, administrative services for investments related to tourism and administrative services envisaging some tourism industries such as transportation, recreational and cultural activities (see table 6). These are not found in the TSA:RMF (2008). Annex 4 (in the second part) provides a detailed description of each of these products.

Moreover, a correspondence of these services with the industries that produce them (defined at four digits level both at ISIC level and NACE Rev. 2 / ISAT 2008 level) is presented (see table 7). The reason for having this correspondence is to help countries that do not use CPC ver. 2 classification to better identify the services related to collective consumption in tourism. Iceland is not using CPC ver. 2.

A number of eight products defined at CPC Ver. 2 level has been proposed by the author in addition to the eight products already included in TSA:RMF (2008). These products correspond to four additional industries (defined at ISIC Rev. 4 four digits level) which complements the six corresponding industries already identified from the related products proposed by TSA:RMF (2008).

Overall, (adding the TSA:RMF (2008) proposals with the one made by the author) 16 products make up tourism collective consumption. These correspond to ten industries defined at ISIC Rev. 4 four digits level



**Table 7:** The correspondence between products (CPC Ver. 2) and industries (ISIC Rev. 4, NACE Rev. 2 and ISAT 2008) that make up tourism collective consumption.

Source: TSA:RMF, 2008, p. 100 and United Nations Statistics Divisions, 2013

No	CPC Code	Product Name	ISIC code	ISIC industry name	NACE Rev. 2 / ISAT 2008 code	NACE Rev. 2 / ISAT 2008 industry name
1.	85561	Tourism promotion services	7990*	Other reservation service and related activities	79.90*	Other reservation service and related activities
2.	85562	Visitor information services	7990*	Other reservation service and related activities	79.90*	Other reservation service and related activities
3.	91135	Public administrative services related to the distributive and catering trades, hotels and restaurants	8413*	Regulation of and contribution to more efficient operation of businesses	84.13*	Regulation of and contribution to more efficient operation of businesses
4.	91136	Public administrative services related to tourism affairs	8413*	Regulation of and contribution to more efficient operation of businesses	84.13*	Regulation of and contribution to more efficient operation of businesses
<b>Part of</b>						
5.	83700	Market research and public opinion polling services	7320	Market research and public opinion polling	73.20*	Market research and public opinion polling
6.	91260	Police and fire protection services	8423*	Public order and safety activities	84.24* 84.25*	Public order and safety activities Fire service activities
7.	92919	Other education and training services, n.e.c.	8549	Other education n.e.c.	85.53* 85.59*	Driving school activities Other education n.e.c.
8.	92920	Education support services	8550	Educational support activities	85.60*	Educational support activities
<b>Other personal proposals (part of)</b>						
9.	81119	Research and experimental development services in other natural sciences ( <i>for tourism research</i> )	7210*	7210 - Research and experimental development on natural sciences and engineering	72.19*	Other research and experimental development on natural sciences and engineering
10.	81212	Research and experimental development services in economics ( <i>for tourism research</i> )	7220*	Research and experimental development on social sciences and humanities	72.20*	Research and experimental development on social sciences and humanities
11.	81219	Research and experimental development services in other social sciences ( <i>for tourism research</i> )	7220*	Research and experimental development on social sciences and humanities	72.20*	Research and experimental development on social sciences and humanities
12.	81300	Interdisciplinary research and experimental development services ( <i>for tourism research</i> )	7210*	Research and experimental development on natural sciences and engineering	72.19*	Other research and experimental development on natural sciences and engineering

No	CPC Code	Product Name	ISIC code	ISIC industry name	NACE Rev. 2 / ISAT 2008 code	NACE Rev. 2 / ISAT 2008 industry name
			7220*	Research and experimental development on social sciences and humanities	72.20*	Research and experimental development on social sciences and humanities
13.	91113	Overall economic and social planning and statistical services <i>(for statistics of tourism)</i>	8411*	General public administration activities	84.11*	General public administration activities
14.	91124	Public administrative services related to recreation, culture and religion	8412*	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	84.12*	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security
15.	91137	Public administrative services related to multipurpose development projects <i>(for projects related to investments in tourism)</i>	8413*	Regulation of and contribution to more efficient operation of businesses	84.13*	Regulation of and contribution to more efficient operation of businesses
16.	91134	Public administrative services related to transport and communication <i>(services for passenger transportation)</i>	8413*	Regulation of and contribution to more efficient operation of businesses	84.13*	Regulation of and contribution to more efficient operation of businesses

\* - part of respective industry

\*\* - these services should not be provided on a fee basis paid by tourism companies

Operating at industry level poses difficulties due to the fact that an industry usually produces more than one product. In this regard for a better understanding of what kind of products are excluded from the industries related to collective consumption in tourism on the one hand and, what kind of products are included on the other, a summarizing table was created (see Annex 5). Here eight categories were created labelled as “generic names” as follows:

- Tourism promotion & Visitor information
- Public administrative services specific for tourism and for tourism industries (excluding cultural and recreational activities)
- Market research in tourism
- Public order and safety related to tourism
- Education related to tourism
- Research and development related to tourism
- Official statistics for tourism

- Public administrative services specific for culture and recreation

The first five categories are also partly found in TSA:RMF (2008) (but named differently and only according to CPC ver. 2) while the rest of three are proposals from the author. As a rule, at least one single industry is related to each of these eight categories. Further, from each industry, only one part is referring to a collective service related to tourism (defined as a product/(s) according to CPC Ver. 2 level). However, by excepting tourism promotion services (CPC 85561) and public administrative services related to tourism (CPC 91136), only one part from each of the CPC products (which relates to collective consumption in tourism) might refer to tourism. For instance, in case of 91260 “Police and fire protection services”, it is obvious that only the part that is related to tourism is included such as the control of visitors at the border, the coast guard rescue missions for passenger vessels or mountain rescue operation for tourists.

It should be remembered once again that from the above eight categories, only collective services shall be included.

### **2.2.3. An approach by using the COFOG classification**

It is important to mention that in the previous edition of TSA:RMF, namely TSA:RMF (2001), the Classification of the Functions of the Government Rev. 2 (COFOG) was suggested to be used when approaching types of collective services. However, COFOG was replaced in the TSA:RMF (2008) with CPC ver. 2 as the older TSA version presented tourism collective consumption “ambiguously” according to the Classification of the functions of the government (COFOG) (TSA:RMF, 2008, p. 84). At the same time, TSA:RMF (2008) admits the fact that tourism collective consumption represents only a part of the total expenditure made by government in favour of tourism (TSA:RMF, 2008, p. 84). For instance, there could also be tourism related subsidies to corporation or transfers to non-profit institutions (van de Steeg, 2006).

At a European level countries compile data on government expenditure following COFOG classification (and Iceland is one of this country). Therefore using COFOG classification should not be avoided. Moreover, in a practical manner the expenditure related to collective services can be separately identified in the National Accounts only by using COFOG classification:

*COFOG shows government expenditure on health, education, defence and so on and is also used to distinguish between collective services and individual consumption goods and services provided by government (SNA, 2008, para. 29.11).*

Actually, the borderline between collective services and individual consumption of government is established by COFOG:

*For the goods and services provided by government units, the borderline between individual and collective goods and services is drawn on the basis of the classification of the functions of government (COFOG) (ESA, 2010, para. 3.104).*

In fact, COFOG classification contains ten classes of services and each of these is made up by sections. SNA (2008) is very precise in identifying from COFOG classification all the categories that belong to collective consumption and individual consumption:

*All of classes 01 to 06 are collective services, as are section 07.5 and 07.6 of health, sections 08.3 to 08.6 of recreation, culture and religion, sections 09.7 and 09.8 of education, and sections 10.8 and 10.9 of social protection. These sections cover expenditures on general administration, regulation, research that is not recorded as capital formation and so on. (SNA, 2008, para. 9.100).*

However, details about the COFOG classification have to be known in order to make use of this (see: United Nations Statistical Division, 2014b).

In these circumstances, the starting point for approaching tourism collective consumption should be the collective consumption from National Accounts. At the same time, in the National Accounts, details about collective consumption are provided only by COFOG classification. Therefore, it is logical to use COFOG classification when referring to tourism collective consumption. Most of the European countries also have data on governmental consumption broken down by COFOG categories. It should be mentioned that COFOG classification is a three-level classification. There are 10 “divisions” at the top level which are further broken down by 6 “groups” and these groups are subdivided into classes (Eurostat, 2011).

Five categories of collective consumption called “largely related” to tourism<sup>4</sup> are hereby proposed (see table 8) and each of them incorporates a least one related COFOG class. Also the correspondence with CPC Ver. 2 was established based on the cross-classification between COFOG - ISIC Rev. 3.1. – ISIC Rev. 4 – CPC Ver. 2.<sup>5</sup> Details about each proposed COFOG classes are provided in Annex 6.

One can see that there is only one COFOG class that can be said to be 100% tourism related: “04.73 Tourism (CS)”. In the COFOG classification, the 04.73 class is included within the “Economic Affairs” division, the group referring to “04.7 Other industries”. Within group 04.7 there is also the class of “04.72 Hotels and restaurants (CS)” but since mainly restaurants are in some cases serving local people (not only tourists) this cannot be considered 100% related to tourism.

Anyway, the author proposed another generic category entitled “Economic affairs envisaging some tourism industries” to include the economic activities which concern the businesses in

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<sup>4</sup> In fact this term “largely related” does apply to four out of five categories proposed.

<sup>5</sup> Due to space reasons, the correspondences with ISIC Rev. 3.1 were not included in the table. This cross-classification was carried out because in fact there is no direct COFOG - CPC ver. 2 correspondence table available at this moment. Using these cross-classifications was suggested following an email correspondence with United Nations Statistical Division.

the main tourism industries. It refers here to hotels and restaurants, transport, recreation and culture. A special case is the category of “Multi-purpose development projects (CS)” which was included in table 8 due to the fact that it might contain projects related to recreation. Also, it is important to mention that the group “08.60 Recreation, culture and religion n.e.c. (CS)” is not part of division 4 “Economic affairs” but part of division 8 “Recreation, culture and religion” and it was incorporated here only by default as there is a collective service which is referring to cultural and recreation industries.

Another category proposed in table 8 refers to “Public order and safety related to tourism” which is a pure collective service with relevance for tourism in the group: “03.10 Police services”. One might consider that maintaining public order and safety is a service benefiting also visitors. In addition, it should be added the border control which is also included here.

**Table 8:** A new proposed structure for classifying collective consumption “largely related” to tourism according with COFOG and the related CPC Ver. 2 and ISIC Rev. 4.

No.	Category	COFOG		Related CPC Ver. 2		Related ISIC Rev. 4	
		Code	Name	Code	Name	Code	Name
<b>Included entirely</b>							
1.	<b>Specific tourism affairs</b>	04.73	Tourism (CS)	91136	Public administrative services related to tourism affairs	8413*	Regulation of and contribution to more efficient operation of businesses
				85561	Tourism promotion services	7990*	Other reservation service and related activities
				85562	Visitor information services	7990*	Other reservation service and related activities
<b>Part of (both COFOG and CPC Ver. 2)</b>							
2.	<b>Economic affairs envisaging some tourism industries</b>	04.72	Hotels and restaurants (CS)	91135*	Public administrative services related to the distributive and catering trades, hotels and restaurants	8413*	Regulation of and contribution to more efficient operation of businesses
		04.51	Road transport (CS)	91134*	Public administrative services related to transport and communication	8413*	Regulation of and contribution to more efficient operation of businesses
		04.52	Water transport (CS)	91134*	Public administrative services related to transport and communication	8413*	Regulation of and contribution to more efficient operation of businesses
		04.53	Rail transport (CS)	91134*	Public administrative services related to transport and communication	8413*	Regulation of and contribution to more efficient operation of businesses
		04.54	Air transport (CS)	91134*	Public administrative	8413*	Regulation of and contribution to more

No.	Category	COFOG		Related CPC Ver. 2		Related ISIC Rev. 4	
		Code	Name	Code	Name	Code	Name
					services related to transport and communication		efficient operation of businesses
		08.60	Recreation, culture and religion n.e.c. (CS)	91124*	Public administrative services related to recreation, culture and religion	8412*	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security
		04.74	Multi-purpose development projects (CS) (it includes recreation)	91137*	Public administrative services related to multipurpose development projects	8413*	Regulation of and contribution to more efficient operation of businesses
3.	<b>Public order and safety</b> related to tourism	03.10	Police services (CS)	91260*	Police and fire protection services	8423*	Public order and safety activities
4.	<b>Research and development</b> in tourism	04.87	R&D Other industries (CS)	81212	Research and experimental development services in economics	7220*	Research and experimental development on social sciences and humanities
				81219	Research and experimental development services in other social sciences		
				81300	Interdisciplinary research and experimental development services	7210*	Research and experimental development on natural sciences and engineering
5.	<b>Statistics in tourism</b> produced by “official statistical office”	01.32	Overall planning and statistical services (CS)	91113	Overall economic and social planning and statistical services	8411*	General public administration activities

\* - part of

A separate grouping is related to Research and Development (R&D) services. Some of these might envisage tourism as well. If the results of the research are freely available they might be in the benefit of tourism industries (for instance this study). Only one class was proposed as having relevance for tourism: “04.87 R&D Other industries (CS)”. Within this category it is clearly specified as belonging to “tourism and multi-purpose development projects” (United Nations Statistical Division, 2014b). Nevertheless, there might be research activities in the sectors connected to tourism such as Transportation or Recreation and Culture but in order to have a conservative approach only the above category was proposed, leaving aside the research and development specific to those sectors.

For the statistics in tourism produced by the statistical offices (in Iceland there is Statistics Iceland – Hagstofa Íslands), a separate category was created and it is part of the COFOG class “01.32 Overall planning and statistical services (CS)”.

In parallel with COFOG classification, a correspondence with CPC ver. 2 and ISIC Rev. 4 was also presented. This was done in order to keep the link with the classification proposed by TSA:RMF (2008). However, this approach has some limitations as in some cases the correspondence between COFOG and CPC ver. 2 might be seen as problematic as only a part of the respective CPC product is in fact correspondent with the COFOG counterpart.

However, overall the advantage of these classifications is the fact that it follows strictly the classification of collective services as stated by the COFOG classification. In other words, there is no doubt that one can deal with a collective service. However, the major disadvantage is that in some cases the link with tourism (either visitors or suppliers from tourism industries) is not very evident.

Following the COFOG classification in case of identification of collective services, it was also revealed that some correspondent CPC ver. 2 products (which are found in TSA:RMF (2008), table 9) are not presented in the new proposed classification of tourism collective consumption (see table 8). This is the case of the following CPC products:

- 83700 Market research and public opinion polling services
- 92919 Other education and training services
- 92920 Educational support services

Regarding “83700 Market research and public opinion polling services” this was not at all found in the COFOG classification. It might not have been seen as a public collective service, as this kind of service is usually not undertaken by the public sector but rather private companies who are commissioned by the former.

In the case of “92919 Other education and training services” even if a connection with tourism might be found in the case of vocational training for specific tourism occupations (i.e. receptionist, chef) these services are considered individual services and not collective services according to COFOG classification.

The only aspect related to tourism within “92920 Educational support services” is related to “organization of student exchange programmes”. Indeed, these usually last less than one year and in this case exchange students are considered visitors to the host country. Nevertheless, like in the case of Market research and public opinion polling services, these services are not provided by the government as a public collective service. Therefore, it is questionable if these services can be considered within the collective consumption concept.

From the above mentioned reasons, the author proposes not to include these three products in the classification of tourism collective consumption to be in accordance with COFOG classification. The future revised version of TSA:RMF (2008) might do the same. Another difference from TSA:RMF (2008) concerns the CPC product “Public administrative services related to the distributive and catering trades, hotels and restaurants” where only one part is

proposed to be related to tourism. So, this CPC category should be placed in the lower part of the TSA:RMF (2008) table 9 as “Part of”.

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This chapter has provided some insights into the theoretical framework of the two TSA aggregates (Tourism Gross Fixed Capital Formation and Tourism Collective Consumption) which are not yet considered a priority by TSA:RMF (2008). Further, the author went beyond international standards by proposing new theoretical approaches for these two aggregates by extending the existing framework. This fact is even encouraged by TSA:RMF (2008) in some instances. Overall, the chapter can be seen as a first basic step, in dealing with the treatment of the two aggregates.



### **3. International experience**

In this section, a more practical value for the theoretical context provided above is envisaged by examining the current practices of the countries that already have developed estimates for Tourism Gross Fixed Capital Formation (TGFCF) and/or Tourism Collective Consumption (TCC). A special focus is on European countries, which might be more relevant for Iceland as a European country and member of the European Economic Area. Eurostat's TSA projects carried out in the last years provide good references on this topic. Nevertheless, the experience of some other countries outside Europe is also considered.

#### **3.1. European experiences**

##### **3.1.1. General methodological aspects**

A more detailed analysis regarding the TSA methodology was carried out by Eurostat in the years 2008-2009 (see: Eurostat, 2009a). It should be noted that the analysis in this subchapter is strictly based on this Eurostat research. Therefore, one might consider it not an updated research as some TSA developments might have occurred since then, at least for some countries.

Among the 27 EU countries (at that moment), more specific information related to TGFCF and/or TCC was presented by 13 countries (which represented less than a half of the EU countries): Cyprus, Czech Republic, Denmark, Estonia, Finland, Hungary, Poland, Portugal, Spain, Sweden, Ireland, Slovakia and Slovenia. But this does not mean that each of these countries fully approached TGFCF and/or TCC.

For some countries such as Portugal or Cyprus in that period, only the intention of having this compilation was noted. Anyway, in general the countries presented only a partial version of TGFCF and this was particularly mentioned by Hungary, Ireland or Poland. On the other hand, countries such as Cyprus or Slovenia presented also some considerations regarding the data sources which should be used to compile TCC and/or TGFCF. Also, lack of clear guidelines from TSA:RMF (2008) was mentioned by Slovakia.

Some countries, such as Sweden and Denmark, only pointed out difficulties which were also mentioned by other countries as well (in total there were nine EU countries listing difficulties - see table 9). From a certain perspective, it is useful to present the difficulties encountered by these countries separately for TGFCF and TCC (see table 9).

In table 9 the difficulties encountered in the case of Tourism Gross Fixed Capital Formation, were for two countries (Denmark and Ireland) lack of data. The classification by asset types seemed to be the most common problem for many of the countries (Finland, Spain, Hungary

and somewhat for Slovenia). The issue of establishing a tourism share of investments was pointed out by Sweden while Poland did not envisage GFCF in other non-tourism industries.

**Table 9:** Methodological difficulties encountered in compiling TGFCF and TCC reported by some EU countries in 2008-2009.

Source: Eurostat, 2009a

Country	Reported difficulty
<b>Tourism Gross Fixed Capital Formation</b>	
Denmark	“Lack of appropriate data” (p. 63 )
Finland	Measurement problems related to “the selection of the asset types used for providing mainly tourism services” (p. 92)
Hungary	No separate identification of “types of capital goods” (p. 107)
Poland	TGFCF in the non-tourism industries was not included (p. 149)
Spain	“Tourism assets classification” from TSA:RMF cannot be implemented (p. 179)
Sweden	Establishing a “tourism share of all investments” (p. 194)
Ireland	Lack of “sufficiently detailed data” (p. 256)
Slovakia	No clear international guidelines (p. 284)
Slovenia	Estimating GFCF by total tourism industries seems to be favoured in the detriment of “GFCF of tourism specific capital goods” (p. 300-301)
<b>Tourism Collective Consumption</b>	
Hungary	“Operating cost of recreation homes for government employees” not reported in household survey (excluded from TSA). However, this is not part of TCC but of internal tourism consumption (in kind component) (p. 108)
Poland	It would be “useful to broaden its content” (p. 149 )
Spain	No separation by “different subsectors that compose the general government sector” (p. 180)
Sweden	“No specific interest” to be expressed (p. 194)
Ireland	No data available at regional level (p. 256)
Slovakia	No “precise recommendation on the recording of tourism collective consumption” in the international standards (p. 285)
Slovenia	The breakdown of TCC by level of government: lack of data both at regional level (due to small size of country) and at municipal level (p. 301)

Regarding Tourism Collective Consumption the most common difficulty relates to availability of data at sub-national level. This was the case for Spain, Slovenia and Ireland. Sweden mentioned the fact that there was “no specific interest” for compiling this aggregate while Poland stated it would be “useful to broaden its content”. A very particular issue was mentioned by Hungary which does not fall into the collective consumption concept but rather the internal tourism consumption concept. Again, like in the case of TGFCF the reason of clear indications from international standards was mentioned by Slovakia.

### 3.1.2. Analysing some European countries' results

First of all, it is important to present the reference year for the European countries producing estimates for TGFCF and/or TCC. These should be considered when analysing TSA data between countries as there is no uniformity in this field. One should mention that this data is only based on the two Eurostat TSA data collection published in 2011 and 2013 (therefore there is no a necessary link with section 3.1.1).

Different reference years can be noticed for European countries producing TGFCF and/or TCC (see table 10). The most recent ones are the ones from Czech Republic and Slovakia (2010). Next is 2008 as a reference year for Spain, Denmark and Estonia. The year 2007 was the reference year for Portugal while 2006 was the reference year for Sweden and Poland, and 2005 for Hungary. Ireland had the most outdated data for TCC estimates dating from 2000.

**Table 10:** The reference years for European countries producing Tourism Gross Fixed Capital Formation and Tourism Collective Consumption.

Source: compiled from Eurostat, 2011; 2013

Country	Tourism Gross Fixed Capital Formation	Tourism Collective Consumption
Czech Republic	2008, 2010	N/A
Estonia	2006, 2008	N/A
Spain	2008	2006, 2008
Norway	2007	N/A
Slovenia	NA	2003
Ireland	NA	2000
Denmark	NA	2008
Sweden	NA	2006
Poland	2006	2006
Hungary	2005	N/A
Slovakia	2010	N/A
Portugal	2007	N/A

N/A – not applicable (as there were no estimates produced)

Overall, there were eight countries presenting estimates on Tourism Gross Fixed Capital Formation according to Eurostat TSA data collections carried out in 2010 and 2013. Although the comparability of data between countries is rather problematic due to different individual approaches of countries, one can see that Spain is by far the country having the highest value of TGFCF (EUR 13,427 mil). At opposite end Slovenia has EUR 222 mil in TGFCF. Rather similar figures are present for Hungary and Poland with just above EUR 1,500 mil. (see table 11).

One can see that Portugal and Slovakia include only GFCF in tourism characteristic industries. Norway does the same and includes in addition local transportation industries but excludes passenger transportation by coach. Poland recognizes that in its case in general there is a “limited scope compared with TSA:RMF” (Eurostat, 2011, p. 18) (see table 11).

**Table 11:** Some figures for Tourism Gross Fixed Capital Formation in several European countries.

Source: compiled upon Eurostat, 2011; 2013

- EUR mil. -

Country	Reference Year	Tourism Gross Fixed Capital Formation (mil. EUR)	Country's notes
Spain	2008	13,427	
Estonia	2008	222	
Czech Republic	2010	1,357	
Portugal	2007	5,006	This refers to the gross fixed capital formation of tourism-characteristic industries.
Slovakia	2010	1,039	Data on gross fixed capital formation include internationally comparable characteristic industries and characteristic industries specific to Slovakia.
Norway	2007	1,853	Tourism industry does not include services associated with own vacation homes and retail trade of country-specific tourism characteristic goods. Production of local passenger transport is included in the transport industries. Production of passenger transport by coach is not included.
Hungary	2005	1,555	
Poland	2006	1,565	Limited scope as compared with TSA:RMF

Fewer countries than the ones producing TGFCF presented estimates to Eurostat for TCC, only six in fact. Spain is again the leader among these countries having a tourism collective consumption reaching EUR 2,455 mil. Far lower estimates (below EUR 100 mil.) are shown by Denmark, Poland, Ireland and Sweden. However, Slovenia shows half of Spain in terms of TCC (EUR 1,331 mil.). Again in this case the comparability of data among countries is hampered by different approaches taken by each country (see country's notes from the table 12). A conservative approach is seen in case of Denmark which includes only expenses incurred by tourism agencies/organisations.

**Table 12:** Some figures for Tourism Collective Consumption in several European countries.

Source: compiled upon Eurostat, 2011; 2013

- EUR mil. -

Country	Reference Year	Tourism Collective Consumption	Country's notes
Spain	2008	2,455	
Denmark	2008	73	Includes NTO, regional tourism organizations, tourism specific regional development projects, municipal spending on tourism agencies
Ireland	2000	89	National level data only. Data not complete. Further investigation is necessary to complete this table
Poland	2006	39	Limited scope as compared with TSA:RMF
Slovenia	2003	1,331	
Sweden	2006	76	RMF 2000 is still used

### 3.1.3. Practices in several European countries

This section will present some European countries' practices in compiling Tourism Gross Fixed Capital Formation and Tourism Collective Consumption. These countries are Spain, Portugal, Norway and the Czech Republic.<sup>6</sup> The reason for choosing these countries is the fact that they disseminated complete TSA data (in a tabular format) on a separate webpage which included TGFCF and/or TCC. It is important to mention that among these four countries only Spain has data for TCC, while the rest of the countries had only data on TGFCF.

#### Spain

As mentioned before, Spain is the country producing data both for TGFCF and TCC. For each of these there is a separate table: "Gross formation of fixed capital of characteristic branches of activity by products, period and components" and respectively "Public Administrations' Tourist Consumption: Individual and group expenditure by products, periods and components" (Instituto Nacional de Estadística, 2014).

In the case of Gross Fixed Capital Formation, eleven tourism industries are considered with Cultural industry mixed with Sports and leisure activities (so a single industry called "Cultural, leisure and sport activities" but separated in two different categories: Market and Non-market). Vacation homes are not presented as a distinct tourism industry. Regarding the product breakdown it can be stated that there are no tourism-specific assets considered but a general categorization by three large categories: "Industrial products", "Construction works" and "Other products". The first category is further broken down in two subcategories "Means of transport" and "Other capital goods" while the second one includes three subcategories: "Dwellings", "Non-residential buildings" and "Civil engineering". In addition the subcategory "Means of transport" is further divided in "Motor vehicles", "Naval construction", "Railway and tramway locomotives and rolling-stock" and "Manufacture of aircraft and spacecraft" (Instituto Nacional de Estadística, 2014). Therefore a departure from the TSA:RMF (2008) can be observed regarding the product breakdown. Moreover, as a specificity, Spanish TSA also presents an estimation of GFCF derived from tourism in a separate table containing direct and indirect effects (Eurostat, 2009a, p. 180).

A slightly different terminology is used for TCC named "Public Administrations' Tourist Consumption". Moreover, the related table is completely different from the one proposed by TSA:RMF (2008). There is no level of government breakdown (by national, regional and local level) while the product breakdown is presented according with to the same TSA product classification used for tourism consumption. Instead, there are two components of "Public Administrations' Tourist Consumption": "Individual" and "Group" (Instituto Nacional de Estadística, 2014). Therefore, collective consumption is not only included but also individual consumption and by doing this it exceeds the international standards.

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<sup>6</sup> One can see that excepting Spain, the rest of the countries were not included in table 9 (from subchapter 3.1.1). There are different reasons for that: Norway was not included in the detailed Eurostat research from 2008-2009 while Portugal and the Czech Republic did not provide enough details on the topic.

Regarding data sources, it is important to mention that “most of the data concerning government sector come from public accounting and are provided by the audit office” (Eurostat, 2009a, p. 180).

## **Portugal**

Portugal presented estimates of TGFCF following the Eurostat investigations on TSA carried out in 2008-2009. There are two tables referring to GFCF namely “Gross fixed capital formation by tourism characteristic industries” and “Gross fixed capital formation by tourism characteristic industries and type of asset” (Statistics Portugal, 2014). The first one is in fact a table without presenting any type of assets while the second one includes the types of assets.

In the first table, the time series available are for the period 2000-2007 and the base year is 2006 (Statistics Portugal, 2014). Here some tourism industries are rather aggregated (the case of “Transport” and “Cultural, sports and recreational activities”). Figures for total GFCF in the economy are also presented and this allows the calculation of tourism industries’ share.

The second table has the same breakdown of tourism industries as TSA:RMF (2008) proposes. In addition it includes the industry of “Passenger transport supporting services”; it should be remarked that second homes are treated as a distinct industry following the international standards. However, the breakdown by assets in the Portuguese TSA is different from TSA:RMF (2008). In fact, there is no tourism specific asset classification. There are two large categories: “Tangible fixed assets” and “Intangible fixed assets”. The first category is further classified in four subcategories: “Total construction”, “Transport equipment”, “Other machinery and equipment” and “Animals and plantations”.

Among these only “Total construction” is further subdivided in “Dwellings” and “Other buildings and structures” (Statistics Portugal, 2014). This might be considered a departure from the standards.

## **Norway**

Data on GFCF in the Norwegian TSA are rather aggregated, with no breakdown for tourism-specific assets being provided. Actually, only GFCF for ten tourism industries is presented: “Hotels and restaurants”, “Transport via railways, tramway and suburban transport”, “Scheduled motor bus transport and taxi operation”, “Sea and coastal water passenger transport abroad”, “Inland water transport”, “Air transport”, “Activities of travel agencies etc.”, “Rental of transport equipment”, “Motion picture, other entertainment, news agencies and cultural services” and “Sporting and other recreational activities” (Statistics Norway, 2014). One can notice the exclusion of vacation homes and the aggregation within some tourism industries of some activities which are not related to tourism according to the international standards such as: “Tramway and suburban transportation”, “Motion picture”, “News agencies”. The Norwegian table also comprises the GFCF of the whole economy (including a separate figure for “Mainland Norway”) and presents the share of tourism industries in total gross fixed capital formation. Data are presented for the period 2004-2007

in two different tables, one in absolute figures (millions NOK) and the other one in annual volume change (in percentage) (Statistics Norway, 2014).

### **Czech Republic**

The Czech TSA table referring to GFCF in tourism is very similar to the format proposed by international standards. In fact, broadly the product breakdown of assets is the same with the one proposed by TSA:RMF (2008). A category of “Non-produced non-financial assets” is also included stating that “Major improvements to non-produced non-financial assets and costs of ownership transfer on non-produced non-financial assets are included” (Czech Statistical Office, 2014, p. n/a). Apart from each of the tourism industry presented (which are identical with the one proposed by international standards), the table includes also a category of “Tourism connected industries” and the industry of “Passenger supporting services” (which is not considered a tourism industry anymore in the TSA:RMF (2008)). Data are disseminated online on an annual basis for the period 2003-2010.

National Accounts are the main data source in the compilation process, two matrices being used: “matrix of CFCF broken-down by fixed assets and industries” and “matrix of CFCF broken-down by CPA and NACE” (Eurostat, 2009b, p. 63). From these matrices some adjustments are performed in the Czech TSA in order to serve tourism needs, more precisely some tourism shares are estimated for each asset and industry (Eurostat, 2009b).

### **3.2. Experiences in other non-European countries**

There is not too much evidence about other non-European countries that developed estimates for TGFCF and/or TCC. However, one can mention some UNWTO investigations carried out in the last 15 years (see table 13). The last one was published by UNWTO in 2010 as an online publication entitled “TSA data around the world” and was carried out in the period 2009-2010 (see: UNWTO, 2010). The previous similar exercise was carried out in the period 2004-2005 as a second assessment. In fact, in 2001 the “first evaluation of the implementation of the TSA worldwide” (Libreros et al., 2006, p. 83) was performed. However, the first TSA investigation carried out by UNWTO did not include any reference on TGFCF and TCC (see: WTO Department of Statistics and Economic Measurement of Tourism, 2001).

At first sight, one can see that less than one third of countries included in the both UNWTO investigations reported to have TGFCF and/or TCC. If the analysis is restricted only to the respondent countries (countries that provided a “Yes” or “No” answer), there are some slight differences between the two investigations. In the most recent investigation from 2009-2010, 37.5% of the respondent countries produced TCC while 33.3% did TGFCF. In the previous investigation from 2004-2005 the percentages were 24.1% and 31% respectively.

**Table 13:** Countries that undertook measurement<sup>7</sup> of TGFCF and/or TCC.  
Source: upon UNWTO, 2010, p. 108 and Meis, 2005, p. 110

	Year of UNWTO investigation	Number of countries worldwide			List of non-European countries
		Total in the analysis	Total respondent*	Total that undertook measurement	
Tourism Gross Fixed Capital Formation	2009-2010	28	24	8	Indonesia Kazakhstan Morocco Philippine
	2004-2005	34	29	9	Indonesia Morocco Philippine Thailand
Tourism Collective Consumption	2009-2010	28	24	9	Indonesia Kazakhstan Morocco Philippine Peru
	2004-2005	34	29	7	Indonesia Morocco Philippine Peru Thailand

\* - providing a Yes or No answer

In absolute values worldwide there were 7-9 countries that undertook measurement of TGFCF and/or TCC according to the two investigations carried out by UNWTO in 2004-2005 and 2009-2010. Out of these, 4-5 countries (depending on the investigation period and the aggregates estimated) were non-European countries. There were five non-European countries that produced both TGFCF and TCC: Indonesia, Kazakhstan, Morocco, the Philippines and Thailand; however Thailand was not included in the most recent 2009-2010 investigation. Peru produced estimates only for TCC.

As noted previously (see table 13), only non-European countries were envisaged in this analysis. Nevertheless, the European countries not included in this table referred to Poland, Spain and the Netherlands as producing both TGFCF and TCC and France as producing TGFCF according to the last UNWTO investigation (see: UNWTO, 2010, p. 108). France and the Netherlands represent additional European countries, added to the investigations from Eurostat, which were more detailed<sup>8</sup> and separately presented (see: 3.1.).

Both UNWTO investigations did not offer detail on any other aspects of compiling TGFCF and/or TCC (it was just one question from UNWTO – see footnote 6). Moreover, details

<sup>7</sup> In fact this represents a “Yes” answer to the question “Are you undertaking systematic measurement of other components of tourism demand: Tourism gross fixed capital formation and Tourism collective consumption?” (UNWTO, 2010, p. 107).

<sup>8</sup> For European countries the convention was to use only the Eurostat investigations. However, it has to be mentioned that some inconsistencies appears in case of France and the Netherlands which according with UNWTO investigations did have estimates for TGFCF and or TCC but according to the Eurostat analysis there are no estimates for these two European countries.



about the TSA methodology used by some of the non-European countries (presented above) are lacking or the level of dissemination of their TSA in English is not completed yet.

Nevertheless, the author identified some TSA papers from Indonesia, Peru and the Philippines which can provide additional information regarding TGFCF and/or TCC.

## **Indonesia**

Indonesia compiles a table entitled “Gross Fixed Capital Formation related to tourism by kind of capital goods” and a table entitled “Government Expenditure for Tourism Promotion and Development by kind of activity” (Statistics Indonesia et al., 2012).

GFCF related to tourism is broken down into 9 categories of so the called “capital goods”. These are “Hotels and Other Accommodations”, “Restaurant & Similar Construction”, “Building for cultural services, trade centre and similar”, “Sport, recreation and entertainment constructions”, “Infrastructure (road, bridge, port)”, “Other construction”, “Machinery and equipment”, “Transport equipment” and “Other capital”. One can say that these categories correspond broadly with the Tourism specific assets classification from TSA:RMF (2008). In addition, the estimates for TGFCF in Indonesia comprise also a category related to infrastructure which is not yet foreseen by international standards.

Regarding government expenditure, this is broken down in 8 categories named “kind of activity”. These include: “Tourism promotion”, “Planning and Coordination of Tourism Development”, “Compiling Statistics & Statistical Information”, “Research and Development”, “Implementation & Ser. Tourism Information”, “Security and Safety of Tourists”, “Supervision & Regulation” and “Others” (Statistics Indonesia et al., 2012). Some of these categories comply with the CPC Ver. 2 products defined in TSA:RMF (2008) for classifying tourism collective consumption while others are different. In both cases, a percentage breakdown is included for each category.

## **Peru**

In the last TSA for Peru published in 2011, there is a table similar to TSA:RMF (2008) table 9. However, there are only three types of products for which data are compiled in it. These are “Tourism promotion services”, “Public administrative services related to tourism affairs” and “Other education and training services” (Ministerio de Comercio Exterior y Turismo, Oficina General de Estudios Económicos, 2011). More precisely, these three types cover tourism promotion, public cultural services and public education. In case of tourism promotion, the budget of the institutions in charge with this activity (taken from the registers of the Ministry of Economy and Finance) are considered. Similarly, the case of public cultural services for the following institutions was considered: National Institute of Natural Resources, National Institute of Culture and the Owners Association of Leyendas Park. In the case of public education; the current expenditure of universities offering tourism studies and of the Centre of Tourism Training were considered. The principles and method used by national accounts were adopted. (Ministerio de Comercio Exterior y Turismo, Oficina General de Estudios Económicos, 2011). However, only the national level was envisaged.

## **The Philippines**

The Philippines have a long tradition in TSA compilation dating back to the '90s. One can consider the Philippines as a pioneer in this field. This country compiled both TCC and TGFCF.

TCC covers the whole expenditure of the Department of Tourism and “selected units of the Department of Foreign Affairs (DFA), Department of Education, Culture and Sports (DECS) and Department of National Defence (DND), which have been identified as agencies providing tourism collective services” (Virola *et.al*, 2012, p. 4). In addition, data from the Commission on Audit (COA) – annual financial report are used to apply some shares. Before that, an identification of specific tourism related programmes and projects from DOT, DFA, DECS and DND is separately made and classified by type of service. A tabulation of the costs of operations for each institution (personal services and maintenance and operating expenses) and receipts from sale of tourism services (mostly entrance fees) is also carried out (Virola *et.al*, 2012).

Regarding TGFCF, this aggregate covers both the private and the public sector. The above mentioned institutions were included in TGFCF data from the public sector. Also, in this case some shares are computed and applied to COA data. The investments refer to land improvements, buildings and structures, equipment, furniture and fixtures (Virola *et al.*, 2012).

Besides these countries presented above, theoretically there could be other countries that have estimations on TGFCF and/or TCC and which were not included in the UNWTO investigations. One should remember that these UNWTO investigations are somewhat dated and since then there could be other countries that started to produce such estimates. The author identified three other non-European countries: Mexico, Saudi Arabia and India. Moreover, Canada can also be added to this list even if no official figures were disseminated but a pilot study on TGFCF has already been produced instead.

## **Mexico**

Mexico presents estimates for both TGFCF and TCC. The total estimates of TGFCF are presented in different tables. There are some tables that present total TGFCF for several years and TGFCF is broken down by two main categories: “Construction” and “Machinery and equipment”; the latter is further broken down in three subcategories: “Machinery, units and transport related”, “Computer equipment and peripherals” and “Furniture, Office equipment and others” (Instituto Nacional de Estadística y Geografía, 2010). A percentage structure along with a share in the total economy is also included in the tables. Both current and constant prices are used. There is also a one-year table presenting very detailed TGFCF data by types of goods and services categorised according to if they are characteristic for, or connected to tourism. In addition, this table has data for TGFCF of the public sector which is included separately within “Other tourism industries” (non-market subcategory) and presented in detail for the following three services: “Administration and tourism promotion”,

“Recreational service” and “Other services” (Instituto Nacional de Estadística y Geografía, 2010).

Regarding TCC, this is first presented as time series having the breakdown by federal government and state government. Then a table formatted according to TSA:RMF (2008) table 9 is presented for each of the years (both in current and constant prices). However, there is no data for municipal (local) level and at regional level (state level in Mexico) there is only data for Public administrative services related to tourism. Also, there is no data for products such “Market research and public opinion public services”, “Tourism promotion services” and “Educational support services”; instead there is a residual category entitled “Others” (Instituto Nacional de Estadística y Geografía, 2010).

### **Saudi Arabia**

Saudi Arabia presented some estimates for TGFCF as a “private experience” (Saudi Commission for Tourism and Antiquities, 2014, p. 23). There are plans to develop estimates for TCC in the near future considering the importance of the pilgrim segment for the country’s tourism and the related public expenditure.

The data for TGFCF were based on a survey among tourism establishments. TGFCF is in fact expressed as a “Gross volume of investment” made up from the following five categories: “The actual paid-up capital”, “Reserves”, “Profits/Recycled”, “Gross Fixed Assets” and “Financing long-term credit”. Furthermore “Gross Fixed Assets” has four subcategories: “Machines and Equipment”, “Electrical Equipment & electronic”, “Means of transport” and “Lands” (Saudi Commission for Tourism and Antiquities, 2014, p. 60). Only five tourism industries are considered and data are presented for each of them according to the categories/subcategories presented above. The share of each tourism industry in total GFCF of tourism industries is also included. Nevertheless, the compilation of TGFCF in Saudi Arabia has not been designed for international comparability and this is recognized by the TSA compilers: “The Kingdom conducted, as a first step, a survey of the private tourism investment in the Kingdom, which is not useful as a measure for international comparability currently” (Saudi Commission for Tourism and Antiquities, 2014, p. 72).

### **India**

In the second TSA for India for 2009-2010 both TGFCF and TCC are included. Regarding TGFCF, GFCF for 25 industries is presented out of which all the tourism industries can be separately identified. Also, there is no breakdown by types of fixed assets. Instead there is data regarding “the net capital stock” which is “useful in the analysis of capital productivity for tourism and other industries” showing that “tourism industries are less capital intensive” (National Council of Applied Economic Research, 2012, pp. 138-140).

TCC is presented in two tables. The first table includes the central government expenditure on recreation, culture and other purposes. Here the following categories are envisaged: “Compensation of employee”, “Intermediate consumption”, Government final consumption expenditure” (the sum of the previous categories), “Gross fixed capital formation”,

“Subsidies”, Current transfers”, “Capital transfers”, “Loans”, “Share and other equity”. One can see that by adding these categories it exceeds greatly the TSA:RMF (2008). All categories presented above are further divided in four items: “Art and Cultural Affairs Services”, “Recreational and Sporting Services”, “Tourism Affairs and Services”, “Cultural, Recreational and Religious Affairs Services” (National Council of Applied Economic Research, 2012, p. 141). The second table is more detailed and entitled “Central Government’s Department-wise Classification of Expenditure According to Purpose Classification”. One can notice also the usage of COFOG classification as a main reference for government final consumption expenditure. It is important to mention that India also computed the aggregate of Total tourism demand as a sum of internal tourism consumption, TGFCF and TCC.

## **Canada**

Canada is considered to be the first country in the world having a TSA, since 1994. Until now Canadian TSA did not include TGFCF and/or TCC. However, a recent paper (see: Kotsovos, 2013) indicated that some investigations were carried out for TGFCF. For instance, it was stated that the existing framework for TGFCF (from TSA:RMF, 2008), “does not reflect the reality of classification used in Canada” and the “asset classification used in Canada does not permit separate identification of the passenger element (freight and passenger)” (Kotsovos, 2013, p. n/a). In fact, these were the results of a pilot study called “Investment Data in the Tourism Sector” prepared by Statistics Canada in 2012.<sup>9</sup> Some estimates were also prepared but these were not disseminated.

Anyway, what is very interesting to outline here is Canada’s conceptual approach in defining “Tourism-related investment”. This aggregate was seen in four different ways, from the narrowest to the broadest conceptions: “Investment by tourism industries in tourism specific assets”, “All investment by tourism industries” (both in tourism specific assets and non-tourism specific assets), “Investment by tourism specific assets by all investors” (including not only tourism and non-tourism industries but also Government, as a separate sector) and “All investment by tourism industries and all investment in tourism specific assets by all investors” (Statistics Canada, 2012, pp. 11-13). Further, the choice of tourism specific assets was also both challenging and intriguing. The assets related to public infrastructure (which are governmental investment) and the assets referring to the transport equipment were considered non-tourism specific, while tourism specific assets were considered only those that were “clearly associated with tourism commodities” (e.g. hotels, restaurants, recreational facilities, museums, passenger terminals) (Statistics Canada, 2012, pp. 14-16). In other words, tourism specific assets were only some constructions related to tourism industries while there were no machinery and equipment designated as being tourism specific assets; also, transport infrastructure investment by the government was not included even if the importance for tourism was recognized.

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<sup>9</sup> The author wants to thank Ms. Demi Kotsovos from National Economic Accounts Division from Statistics Canada for providing a copy of this study. Also thanks are due to Mr. Scott Meis from the Canadian Tourism Human Resource Council.

### 3.3. Is there a compliance with TSA:RMF (2008)?

The analysis presented above (3.1.3 and 3.2) contained a brief description of the situation for ten countries that have recently produced and fully disseminated estimates for TGFCF and/or TCC: four European countries (Spain, Portugal, Norway and Czech Republic), four Asian countries (Indonesia, Philippine, Saudi Arabia and India) and two American<sup>10</sup> countries (Mexico and Peru). Five of these countries provided estimates for both TGFCF and TCC: Spain, Indonesia, Philippine, Mexico and India. At the same time, there are four countries that have only produced and disseminated data for TGFCF: Portugal, Norway, Czech Republic and Saudi Arabia. Peru is the only country that provided data only for TCC (and not for TGFCF).

It should be remembered that all these countries disseminated TGFCF and/or TCC in separate tabular form. Therefore, for each country, one can compare the format of table presenting TGFCF and/or TCC with the one proposed by TSA:RMF (2008). The level of compliance with international standards can thus be performed. In this regard, it is important to mention that the analysis within this subchapter will envisage only the format of the tables separately, not outlining other detailed methodological issues.

TGFCF was presented and disseminated in a tabular format by nine countries (see table 14). All the countries, excepting Indonesia presented TGFCF for most of the tourism industries. Moreover, the majority of the countries analysed provided the figure of GFCF for the total economy, which is not part of TSA:RMF (2008) request.

**Table 14:** TGFCF tabular compliance with TSA:RMF (2008) for some countries.

No	Country	Classification by type of assets ( <i>in rows</i> )		Classification by industries ( <i>in columns</i> )		Separate memorandum item for non-financial assets
		Tourism-specific fixed assets	Other (general) classification of assets	Tourism industries	Total economy (not required by TSA:RMF)	
1.	Spain	No	Yes	Yes	Yes	No
2.	Portugal	No	Yes	Yes	Yes	No
3.	Norway	No	No	Yes	Yes	No
4.	Czech Republic	Yes	No	Yes	No	Yes
5.	Indonesia	Yes	No	No	No	No
6.	Philippine	No	Yes	Yes	Yes*	No
7.	Mexico	No	Yes	Yes	Yes	No
8.	Saudi Arabia	No	Yes	Yes	No	No
9.	India	No	No	Yes	Yes	No

\* - as a share in total GFCF

Unfortunately, the classification of TGFCF by tourism-specific assets was not provided by most of the countries; only the Czech Republic and Indonesia did, but with certain particularities and at a little more aggregated level. Consequently, most of the countries used their own general classification of assets (at a more aggregated level) as did Spain, Portugal,

<sup>10</sup> Because Canada did not disseminated data on TGFCF, this country is not included here.

the Philippines, Mexico and Saudi Arabia. Two countries (Norway and India) did not use any classification of TGFCF by type of assets.

At the same time, excepting the Czech Republic, none of these countries presented data in a separate memorandum item for non-financial assets of tourism industries.

Regarding TCC it should be remembered that only 6 countries (see table 15) were included in the analysis while the input and judgement of the tabular compliance were based on the information provided in subchapters 3.1., 3.2. and related references. One can notice that only Mexico provided data on TCC classified by level of government, but even in this case it was not done completely since no data is available for municipal level. No country has envisaged data for the memorandum item referring to the expenditure made by tourism industries for tourism promotion (which is considered an intermediate consumption for those industries). Concerning classification of TCC by products, only one third of the countries used the CPC ver. 2 classification, more precisely Peru and Mexico. A version very close to the classification by function (included in the 2001 version of TSA:RMF) was found in the case of Indonesia. The rest of the countries have used their own classification which does not fit entirely with the CPC ver. 2 or classification by function. This is the case of the Philippines and India but also Spain who used the classification of tourism consumption from the TSA tables.

**Table 15:** TCC tabular compliance with TSA:RMF (2008) for some countries.

No	Country	Classification by products (in rows)			Classification by level of government (in columns)	Separate memorandum item for Intermediate consumption of tourism industries
		CPC ver. 2 classification	Classification by function	Other classification		
1.	Spain	No	No	Yes	No	No
2.	Indonesia	No	Yes	No	No	No
3.	Peru	Yes	No	No	No	No
4.	Philippine	No	No	Yes	No	No
5.	Mexico	Yes	No	No	Yes*	No
6.	India	No	No	Yes	No	No

\* - only a national (federal) and regional (state) level

To conclude, the analysis of the countries that provided data in a tabular format for TGFCF and/or TCC revealed that there are evident departures from the international standards. These refer to the classification by type of assets (in case of TGFCF) and both classification of products using CPC ver. 2 and classification by level of government (in case of TCC). Moreover, the memorandum items foreseen by TSA:RMF (2008) were completely neglected (excepting one country for TGFCF). Consequently, countries tend to use more simplified classifications (in many cases their own classification from National Accounts) when presenting data on TGFCF and/or TCC. All these could jeopardize the international comparability of data if no common classifications are used.

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The experience in compiling TGFCF and TCC is not so common worldwide. Only ten countries (according to this study) produced and disseminated complete data (in tabular format) on TGFCF and/or TCC. However, there is evidence from Eurostat that other countries have produced data on TGFCF and/or TCC in the past. Eight European countries can therefore be added to the ten countries analysed in more detail within this chapter. Also Canada has to be mentioned through a pilot study on TGFCF in 2012. Moreover, according to UNWTO investigations, three more non-European countries and two European countries (not included in the Eurostat research) can join this list also. For these five countries no dissemination in tabular format was available.

To sum up, one can see that a **number of twenty four countries around the world have developed estimates for TGFCF and/or TCC in one way or another** (see Annex 7). At the same, time there is a slight difference between TGFCF and TCC. It seems that more countries produced TGFCF than TCC (19 compared with 15); meanwhile ten countries were shown to produce both TGFCF and TCC.

Considering that in 2010 UNWTO identified worldwide a total number of 60 countries producing TSA, one could say that the situation is rather encouraging, *grosso-modo* more than one third of the countries had produced (in a one way or another) estimates for TGFCF and/or TCC. Nevertheless, this analysis has revealed that the compliance with TSA:RMF (2008) is rather problematic.





## **4. Towards compiling Tourism Gross Fixed Capital Formation and Tourism Collective Consumption in Iceland**

This chapter aims to investigate the possibilities for the compilation of TGFCF and TCC according to the Icelandic National Accounts. The starting point for this endeavour is to present the actual situation in terms of availability of data from National Accounts and whether this data can be useful for the tourism sector. Then, some experimental calculations are proposed by the author based on the existing situation and proposals to enhance the development of TCC and/or TGFCF (see: 2.2). At the end of the chapter some thoughts will be provided on how to further develop and improve future estimates.

### **4.1. The existing situation in the Icelandic National Accounts**

An examination of the current situation regarding the two major aggregates from Icelandic National Accounts will be provided separately for Gross Fixed Capital Formation (GFCF) and Government Final Consumption Expenditure respectively. In both cases, the usage of data for tourism purposes will be investigated.

#### **4.1.1. Gross fixed capital formation**

The most important data sources for estimating GFCF in Iceland are: the Enterprise Accounts Register, the Land Registry of Iceland, the C.I.F. value of imported capital goods and the financial account of central and local government (Statistics Iceland, 2011, p. 225). However, in some cases (i.e. air transportation) these data sources are not enough, and additional information is collected from individual enterprises.

Statistics Iceland publishes data on GFCF by industries but the level of detail (two digits ÍSAT level) does not allow a clear identification of tourism industries. Actually, no tourism industry can be separately identified (see table 16). Moreover, it is the old ÍSAT 95 classification that is still used at a more aggregated level (two digits).

Nevertheless, even if the level of aggregation is not very useful for tourism analysis, at least, it an indication can be established that overall the activities that contain tourism industries have contributed to over 10% of the total gross fixed capital formation of the Icelandic economy in 2013. In this regard, it is also important to see the list of which activities should be excluded from the figures presented (see table 16). However, it is difficult to evaluate what could be the influence of the “activities which should be excluded”. Certainly there are

activities for which the part related to tourism is not very significant (i.e. “Renting of machinery; computer & related activities” or “Recreational, cultural and sporting activities”). Inversely there are “Hotels and restaurant” and “Air transportation” where the tourism share could be significant.

**Table 16:** Gross fixed capital formation by some tourism-related activities in Iceland in 2013.

Source: Statistics Iceland, 2014d

<b>Tourism related activities</b>	<b>ISK mil.</b>	<b>What activities should be excluded?</b>
Hotels and restaurants	3,033	Canteens and catering
Land transport; transport via pipelines	3,130	Freight transport and transport via pipelines
Water transport	66	Freight transport
Air transport	757	Freight transport
Supporting and auxiliary transport services; activities of travel agencies	7,619	Supporting and auxiliary transport services
Renting of machinery; computer & related activities	9,692	Renting of all other machinery excluding car rental <sup>11</sup> ; Computer and related activities
Recreational, cultural and sporting activities	2,035	Motion picture and video activities <sup>12</sup> , Radio and Television, News agencies, Libraries and archives
Total tourism-related	26,332	-
<b>Total GFCF in the Icelandic economy</b>	<b>243,319</b>	-

Data on GFCF are also published by types of assets but in this case only the total “business sector investment” classified by types of assets is presented without any cross-classification for each industry. Nevertheless, besides “business sector investment”, there are two more categories of GFCF, namely “Residential construction” and “Government services”, the latter being sub-classified in “Roads and bridges”, “Streets and sewers”, “Public buildings” and “Other public assets n.e.c.” (Statistics Iceland, 2014d).

At the same time, the typology of assets (which is on the Statistics Iceland website) for “business sector investment” is rather aggregated. In fact, only seven categories are presented (Statistics Iceland, 2014e):

1. Motor vehicles for industrial use
2. Ships, aircrafts and pertaining equipment
3. Manufacturing machinery and equipment
4. Office machinery and computers
5. Machinery tools for quarrying and construction
6. Construction
  - 6.1. Buildings
  - 6.2. Construction n.e.c.
7. Other n.e.c.

<sup>11</sup> If a farmer is renting a digger to make foundation pits for rental cottages, the related expenditure is not included unless the farmer is registered with ISAT number for accommodation and in this case it is considered as investment in accommodation industry. One must admit that this digger is not a tourism specific asset.

<sup>12</sup> It should be remembered that according with international standards Motion picture is not considered a tourism industry.

Therefore, at a first sight, this is insufficient for TSA purposes. However, an important statement is provided by the compilers of National Accounts in Iceland:

*An even greater disaggregation by type of asset and by industry following the 5 digit ISAT activity classification is available but not published. However, this disaggregation is delivered on request, provided that requested data are not considered confidential (Statistics Iceland, 2011, p. 153).*

Even if this typology of assets is not sufficient for TSA, a correspondence can be established between on the one hand, the list of TSA:RMF (2008) tourism specific fixed assets and the above seven categories of assets found in Icelandic National Accounts on the other hand (see table 17).

**Table 17:** Correspondence table between Tourism-specific fixed assets from TSA:RMF (2008) and the types of assets from Icelandic National Accounts.

No.	Tourism-specific fixed assets	Typology of assets in Icelandic National Accounts (see: Statistics Iceland, 2014e)
1.	Accommodation for visitors	Buildings Residential construction (for vacation homes*)
2.	Other non-residential buildings and structures proper to tourism industries	Buildings
3.	Passenger transport equipment for tourism purposes	Motor vehicles for industrial use Ships, aircrafts and pertaining equipment Machinery tools for quarrying and construction
4.	Other machinery and equipment specialized for the production of tourism characteristic products	Manufacturing machinery and equipment Office machinery and computers
5.	Improvements of land for tourism purposes	Other n.e.c.

\* - it should be mentioned that “Residential construction” is not part of the seven categories within the “Business sector investment” but part of a separate category called “Constructions”

Once again, one can see that the level of aggregation in the Icelandic National Accounts is insufficient to identify properly the classification of tourism-specific fixed assets. In general, the Icelandic classification by types of assets is too broad to satisfy the needs of tourism analysis. Overall, tourism-specific fixed assets are largely found in all of the seven categories of fixed assets from Icelandic National Accounts (also the category of “Machinery tools for quarrying and construction” might be seen as correspondent with tourism specific assets classification since it contains also some means of transport such as coach vehicles, taxis or trailers – see Annex 8).

At the same time, it is important to add that one of the main data sources for estimating GFCF, the Enterprise Accounts Register (EAR) allows a more “detailed breakdown of fixed assets by type of assets” (Statistics Iceland, 2011, p. 149). Here, assets are classified by types in 10 groups called “depreciation groups” according to the depreciation rate from the tax audit (see Annex 8). Moreover, each of these groups is further disaggregated into various assets, ranging from two types of assets, three types of assets to 20 types (Statistics Iceland, 2011). The relevance for tourism for each item (asset) in the groupings was analysed in the Annex 8. Thus, some items were judged to be relevant or not for tourism while for others a possibility was also indicated (see Annex 8).

To summarize, at present the breakdown of GFCF by industries (as it is published by Statistics Iceland) is not very useful for tourism purposes. The same applies to the breakdown by types of assets. However, unpublished data for GFCF at a more disaggregated level (5 digits ÍSAT) in order to clearly identify the tourism industries could be the starting point to estimate GFCF for tourism in Iceland. The other remaining issue is the breakdown by types of assets which at a first sight seems to be too broad for identifying tourism-specific assets even within the Enterprise Accounts Register (EAR), the primary data source. Nevertheless, one can at least to start with use the classification of assets as it is in the EAR for each tourism industry (see: 4.2.1).

#### **4.1.2. Government final consumption expenditure**

Government final consumption expenditure (GFCE) is the expenditure incurred by the general government on both individual consumption goods and services and collective consumption services. Usually, in order to distinguish between these two, the COFOG classification is used which is also used in Iceland. Statistics Iceland disseminates data at COFOG 3 digits level (see: Statistics Iceland, 2014a).

According to the National Accounts, general government is divided into three “sub-sectors”: central government, local government and the social security funds. The first two categories are in the interest of tourism. Statistics Iceland disseminates data both for local and central government at 3 digits level within COFOG classification (see: Statistics Iceland, 2014b, c).

The main data sources for compiling government statistics are according to Statistics Iceland (2013):

- Budgetary Central Government Account (the State Account)
- The aggregation of local government annual accounts (The Union of Local Authorities in Iceland)
- The annual accounts of the largest municipalities
- The Communal Equalization Fund
- Data provided by State Social Security Institute
- The annual report on the Pension Funds (The Financial Supervisory Authority)
- Consumer price index and building cost index
- Wage price index

One can say that for tourism purposes the first three data sources are of particular importance. At the same time it is important to mention that the Communal Equalization Fund is considered part of the local government sector.

The State Account provides detailed data about the expenditure of the government as well as “key figures for every institution included in the central government account” (Statistics Iceland, 2011, p. 224). Data on the local government level is taken more precisely from the Association of Local Authorities which operates the “Local Authorities’ Reporting Unit”

responsible of collecting detailed data from all the local authorities. There are 74 municipalities in Iceland as of January 1, 2013 (Samband Íslenskra Sveitarfélaga, 2014). In addition, Statistics Iceland also collects data from several large municipalities in order to “acquire further disaggregation of the data” (Statistics Iceland, 2011, p. 225).

From these data sources one can conclude that two levels of government exist in Iceland: national (central) and local (municipal). No regional level is yet functional in Iceland.

As mentioned earlier, in order to separate collective services from individual services the COFOG classification is used. The author proposed (see: 2.2.3) to use COFOG to estimate Tourism Collective Consumption. In fact, five categories were proposed as being relevant for tourism within the COFOG classification (see table 8). All these categories together with the corresponding COFOG classes can also be applied for Iceland.

Firstly, the breakdown by “level of government” will be assessed for Iceland (see table 18). One can see that almost all collective services are provided at national level (e.g. Police services, R&D services, Economic affairs for water and air transportation). At the same time, there are only two collective services provided both at national and local level (e.g. Specific tourism affairs and Economic affairs for road transportation).

**Table 18:** Analysing the “level of government” breakdown for different governmental functions related to tourism in Iceland.

Source: upon Statistics Iceland, 2014a, b, c and Icelandic Association of Local Authorities, 2014

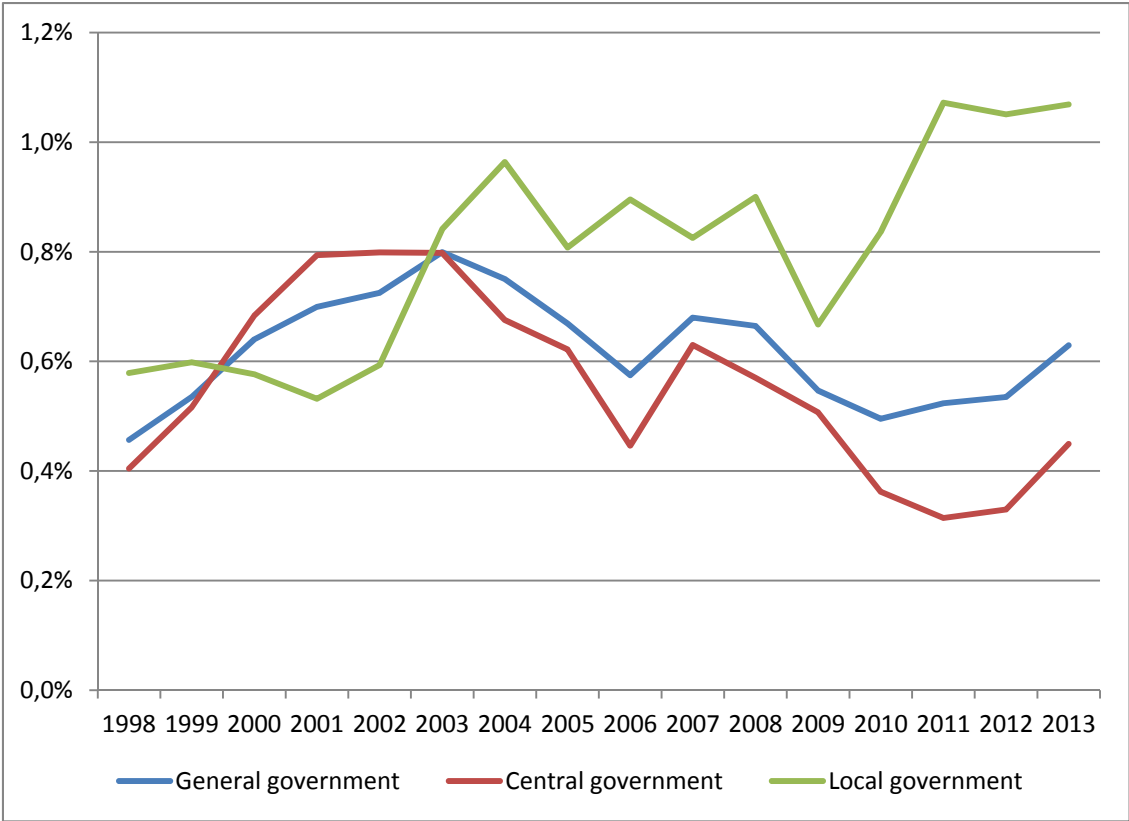
No.	Category	COFOG		National (central)	Local
		Code	Name		
1.	<b>Specific tourism affairs</b>	04.73	Tourism (CS)	✓	✓
2.	<b>Economic affairs envisaging some tourism industries</b>	04.72	Hotels and restaurants (CS) (*)	✓	
		04.51	Road transport (CS)	✓	✓
		04.52	Water transport (CS)	✓	
		04.54	Air transport (CS)	✓	
		08.60	Recreation, culture and religion n.e.c. (CS)	✓	
		04.74	Multi-purpose development projects (CS) ( <i>it includes recreation</i> ) (*)	✓	
3.	<b>Public order and safety</b> related to tourism	03.10	Police services (CS)	✓	
4.	<b>Research and development</b> in tourism	04.87	R&D Other industries (CS)	✓	
5.	<b>Statistics in tourism</b> produced by “official statistical office” – Statistics Iceland	01.32	Overall planning and statistical services (CS)	✓	

(\*) – This category is not separately disseminated by Statistics Iceland

Icelandic National Accounts present GDP by expenditure approach in which Government final consumption is included comprising both individual and collective government final consumption. For the purpose of compiling Tourism Collective Consumption, it is obvious that total government collective consumption is the national benchmark. More precisely, Tourism Collective Consumption is just a part of government final collective consumption.

In the Icelandic National Accounts, collective government final consumption can be calculated using COFOG classification. Data are available for the period 1998-2013 and both central government and local government final consumption are separately presented (see Annex 9, table 1).

Considering only the COFOG 04.73 Tourism, a share of this category (representing tourism) in total government collective consumption can be computed and moreover, this can be represented as shares of General government, Central Government and Local government consumption (see figure 1).



**Figure 1:** Tourism as a share in the Government Collective Consumption in Iceland, 1998-2013.

Source: compiled from Statistics Iceland, 2014a; b; c

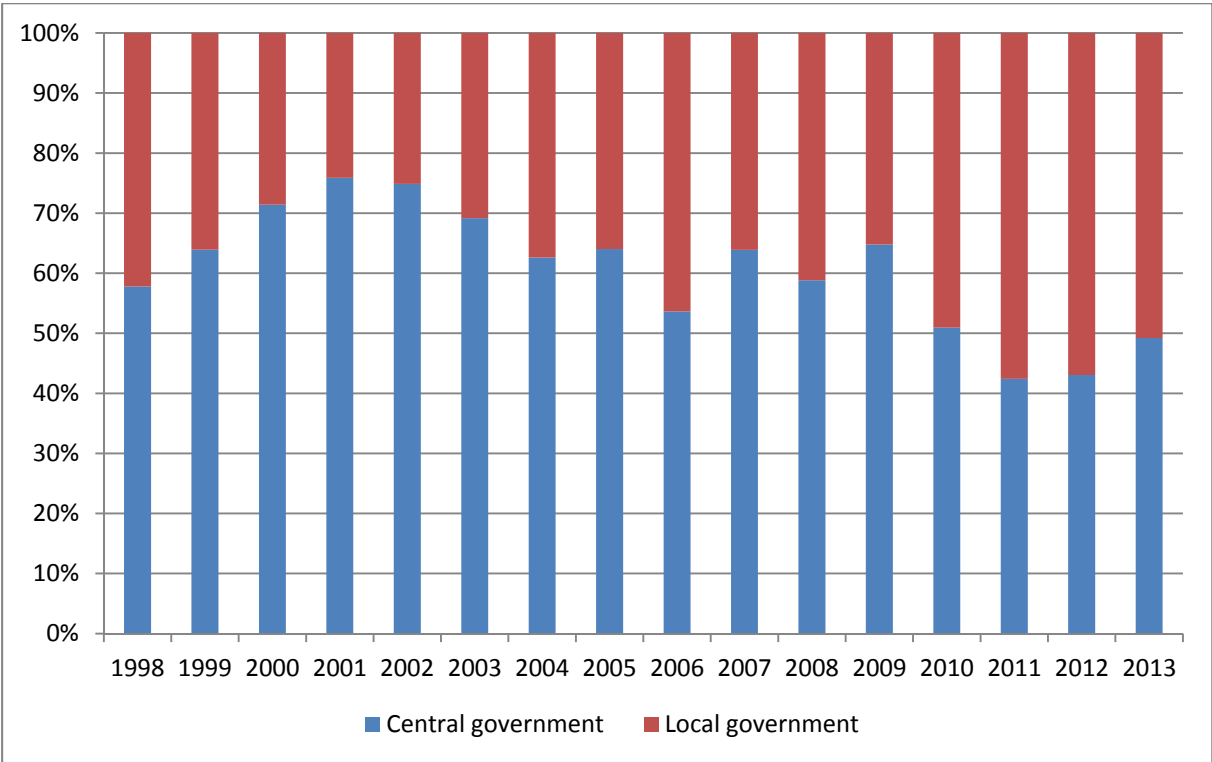
Note: Tourism only defined as COFOG 04.73

By calculating this share, the importance of tourism for the general, central and local government authorities in Iceland can be revealed (once again considering only the collective consumption).<sup>13</sup> One can notice that starting with 2003 tourism becomes more important for the local government compared with central and general government sector (considering only the share in total collective consumption). In other words, the importance of tourism for the local government seems to be higher than for the central government since the share of it in

<sup>13</sup> It should be remembered that only collective services are envisaged. There are also individual services which are provided by the government (e.g. medical services, education, cultural and recreational services), but these are outside the concept of collective services and thus not considered.

the related collective consumption is higher (see figure 1). Consequently, one can state that local authorities have acknowledged better the significance of tourism in Iceland starting with 2003.

The local government involvement for tourism can also be seen as a breakdown from the general government final consumption related to tourism defined as COFOG 04.73 (see Figure 2). One can see that, for the first time starting 2011 the share of local government in total general government final consumption has exceeded 50%. In other words, local authorities in Iceland have allocated more than the central government in terms of their collective consumption related to tourism (COFOG 04.73). The opposite was true in the years 2000-2002 when central government share exceeded 70%.



**Figure 2:** Breakdown of government final consumption for tourism in Iceland, 1998-2013.

Source: compiled from Statistics Iceland, 2014a; b; c

Note: Tourism only defined as COFOG 04.73

The above two figures clearly indicates that tourism in Iceland has become a very important sector for the economic development of local communities. This is proven by the fact that local authorities in Iceland have started to allocate more for tourism than the central government in the last three years. Thus, a greater understanding or perception of the role of tourism might be noticed.

## 4.2. Experimental calculation procedures

Both for TGFCF and TCC, a calculation procedure is proposed in this section on an experimental basis. The section proceeds with a description of the compilation procedures followed by the results obtained.

### 4.2.1. Proposed compilation procedure for Tourism Gross Fixed Capital Formation

As previously shown (see: 4.1.1), the level of detail of published data on GFCF in Iceland is insufficient for compiling a Tourism gross fixed capital formation aggregate in full accordance with TSA:RMF (2008).

However, a proposal for compilation can be initiated based on detailed information on the classification by types of assets and industries from the Enterprise Accounts Registers (EAR). Annex 8 showed a more detailed grouping of these assets, and based on this a new classification can be identified and used. Actually, by detailing all the groupings from EAR one can define a classification to be used for tourism purposes. At the same time, a correspondence with the classification of tourism-specific fixed assets is envisaged.

Under these circumstances, a classification entitled “Fixed assets related to tourism” (see table 19) is proposed. It should be mentioned that out of the four proposed categories only two “Dwellings – vacation homes” and “Hotels and restaurants” can be clearly considered as tourism-specific fixed assets. The other two proposed categories (“Other buildings and structures for tourism industries” and “Passenger transport related to tourism”) contain elements that could not be clearly recognized as tourism-specific assets. This is particularly true for the Passenger transportation category where no clear distinction can be made between freight transportation and passenger transportation for some categories such as airplanes, ships, boats but also automobile or coaches, with the exception of taxis. For this reason, the means of transportations identified in EAR cannot be considered “pure” tourism specific assets.<sup>14</sup> According to TSA:RMF (2008) tourism specific assets are defined as being used exclusively or almost exclusively in the production of tourism characteristic goods and services. It is clear that means of transport as defined in EAR cannot be included in this category since their usage can be also a non-touristic one.

At the same time one can see that, there is no specific category from EAR referring particularly to facilities for sport, recreation or buildings for cultural services such as museums. Maybe, the reason is that these kinds of facilities are not usually financed by the private sector but rather by the public sector or in a public-private partnership. Not to forget

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<sup>14</sup> This is in line also with the Canadian study on investments for tourism sector where “machinery and equipment associated with transportation ... were not included as tourism specific assets” (Statistics Canada, 2012, p. 16)



that EAR includes only the business sector. For the same reason, it is important to underline that the acquisition of means of transport by visitors (or by resident households) is not included in the GFCF concept.

**Table 19:** The proposed classification of “Fixed assets related to tourism” to be used in the experimental compilation of GFCF in Iceland.

No	Proposed categories	Icelandic category from Enterprise Accounts Registers <sup>15</sup>	Link with the classification of tourism-specific fixed assets
1.	Dwellings – vacation homes	0610 Summerhouses	Vacation homes
2.	Hotels and restaurants	0631 Guesthouses and restaurants	Hotels and other accommodation facilities for visitors Restaurants and similar buildings for food-and-beverage-serving visitors
3.	Other buildings and structures for tourism industries	0601 Offices	**
		0605 Commercial buildings	Buildings and infrastructures for the long distance of passengers - Passenger terminals
		0699 Other structures	Buildings for cultural and similar services mainly for use of visitors Facilities for sport, recreation and entertainment Other facilities and structures
4.	Passenger transport related to tourism	0111 Jeeps for less than 9 persons	Land transport (for passenger transport equipment)
		0199 Other automobiles for less than 9 persons	
		0501 Taxi	
		0509 Coach vehicles	
		0597 Snowmobiles ATV and motorbikes	Air transport (for passenger transport equipment)
		0201 Airplanes and other aircrafts and accessories	
		0211 Boats under 12 tons	
0239 Other ships and boats			

\*\* - there is no correspondence with TSA:RMF (2008) classification of tourism-specific assets

A particular aspect refers to the introduction in the classification of one category from EAR which has no correspondence with TSA:RMF (2008) classification of tourism-specific assets. This refers to “Offices” and is part of the Construction sector. However, the fact remains that in some cases (for instance the case of Travel agencies) a direct contact with visitors can be made at these offices (which can be identical with the point of sale). This can justify its inclusion. Moreover, since the aggregate category “Other buildings and structures for tourism industries” is not considered a tourism-specific asset, there is no reason to exclude the offices.

Overall, using the classification above a structure of the TSA:RMF table 8 for Iceland can be drafted (see table 20). Two aggregate categories are proposed (in rows):

<sup>15</sup> These detailed categories were provided by Jón Ævarr Sigurbjörnsson from Statistics Iceland, National Accounts department. The author wants to thank Jón for his valuable support.

- I. Fixed assets related to tourism (see table 19)
- II. Other assets part of Gross Fixed Capital Formation

Total Gross fixed capital formation of tourism industries is in fact the sum of these two categories. Further, a memorandum item is also included entitled “Investments of tourism industries in non-produced assets” and it is divided in two subcategories: “Tangible assets” (referring to Land and building sites) and “Intangible assets” comprising Goodwill, Patents and trademarks, Copyright, Publishing rights and Other purchased entitlements.

In line with TSA:RMF (2008), the columns show tourism industries (data should be presented for each tourism industry) and other industries (as an aggregated residual category).

**Table 20:** Simplified structure of the proposed table for the TGFCF compilation in Iceland.

	<b>Tourism industries (A)</b>	<b>Other industries (B)</b>	<b>Tourism Gross Fixed Capital Formation (C) = (A) + (B)</b>
<b>I. Fixed assets related to tourism (1 + ... +4)</b>	√	√	√
1. Dwellings – vacation homes	√	√	√
2. Hotels and restaurants	√	√	√
3. Other buildings and structures for tourism industries	√	x	√
4. Passenger transport related to tourism	√	x	√
4.1. Motor vehicles for passenger transportation	√	x	√
4.2. Aircrafts	√	x	√
4.3. Boats and ships	√	x	√
<b>II. Other assets part of Gross Fixed Capital Formation of Tourism Industries</b>	√	x	√
<b>III. Total Gross Fixed Capital Formation (I + II)</b>	√	√	√
<b>IV. Memorandum item Investment of tourism industries in non-produced non-financial assets</b>	√	x	x
Tangible assets (Land and building sites)	√	x	x
Intangible assets (Goodwill, Patents and trademarks, Copyright, Publishing rights, Other publishing entitlements)	√	x	x

√ - does apply x – does not apply

Once again one can see that only for two categories of fixed assets (“Dwellings – vacation homes” and “Hotels and restaurants”) data is required for all other industries other than tourism industries (as an aggregate category).

Another important issue in this section refers to the identification of tourism industries. It should be remembered that at present investment data in National Accounts in Iceland still uses the ÍSAT 95 classification. Since the identification of tourism industries in Iceland have been made at ÍSAT 2008 level (see: Frent, 2013, p.88) a conversion is necessary from ÍSAT 95 to ÍSAT 2008. This was performed using the data provided by Statistics Iceland (see: Statistics Iceland, 2014f).

## 4.2.2. Proposed compilation procedure for Tourism Collective Consumption

The compilation procedure in this section follows the proposal to use COFOG classification in estimating TCC (see: 2.2.3). In section 4.1.2 a breakdown by level of government in Iceland was provided in which collective consumption related to tourism was divided into five categories defined in relation with COFOG classes (see table 18).

A new TSA aggregate entitled “Collective consumption largely related to tourism” can be derived as a sum of these five categories. Table 21 presents the calculation of this aggregate in Iceland for the year 2012. In total the share of this aggregate in total collective consumption for Iceland exceeds 20% (20.6%). However, for the local level the share is lower (17.2%) since many of the collective services related to tourism are provided mainly by the central government (see table 21).

**Table 21:** A prototype TSA table - The structure of collective consumption “largely related to tourism” in Iceland according with COFOG, 2012.

Source: upon Statistics Iceland, 2014a; b; c

ISK mil.

No.	Category	COFOG		Levels of government		
		Code	Name	Central	Local	Total
1.	<b>Specific tourism affairs</b>	04.73	Tourism (CS)	357.8	473.3	831.1
2.	<b>Economic affairs</b> envisaging some <b>tourism</b> <b>industries</b>	04.72	Hotels and restaurants (CS)	...	...	...
		04.51	Road transport (CS)	7,985.0	7,276.5	15,261.5
		04.52	Water transport (CS)	1,136.2	0	1,136.2
		04.54	Air transport (CS)	1,842.6	0	1,842.6
		08.60	Recreation, culture and religion n.e.c. (CS)	45.7	0	45.7
		04.74	Multi-purpose development projects (CS) ( <i>it includes recreation</i> )	...	...	...
3.	<b>Police services</b> for the benefit of tourists	03.10	Police services (CS)	11,330.5	0	11,330.5
4.	<b>Research and development</b> in tourism	04.87	R&D Other industries (CS)	164.6	0	164.6
5.	<b>Statistics in tourism</b> produced by Statistics Iceland	01.32	Overall planning and statistical services (CS)	971.8	0	971.8
<b>Total collective consumption “largely related” to tourism</b>				23,834.2	7,749.8	31,584.0
<b>Total collective consumption in Iceland</b>				108,521.7	45,040.1	153,561.8
<b>Share in total collective consumption in Iceland</b>				<b>22.0%</b>	<b>17.2%</b>	<b>20.6%</b>

... - no data available

Further, the five categories proposed for TCC according to the COFOG classification (see table 21) can be divided in two overarching items:

- “pure” tourism expenditure (100% related to tourism)
- expenditure partly related to tourism

In the first item, only the “COFOG 04.73 Tourism” will be included. All expenditures related to tourism within this item can undoubtedly be allocated to tourism without further adjustments. The other four categories belong to the second item. Annex 9, table 2 presents the figures for “COFOG 04.73 Tourism” for the period 1998-2013.

It is important to mention that only a part of the aggregate “Collective consumption largely related to tourism” is in fact defined as Tourism Collective Consumption. For the beginning one can assume that for some categories this part is very low (i.e. Statistics in tourism produced by official statistical office and Research and development in tourism).

Different approaches will be envisaged to estimate the part which is certainly related to tourism. In fact, the following categorization of estimation methods is proposed:

- Estimations based on a **tourism industry-ratio approach**: Economic affairs envisaging some tourism industries
- Own **estimations specific for each category**: Public order and safety related to tourism – Police service, Research and development in tourism, Statistics in tourism produced by “official statistical office” – Statistics Iceland

Each of these four categories will be discussed below.

#### *4.2.2.1. Economic affairs envisaging some tourism industries*

Within this category, six COFOG classes were proposed (see table 21). Nevertheless, Statistics Iceland only provides data for four of them. These are:

- 04.51 Road Transportation (CS)
- 04.52 Water Transportation (CS)
- 04.54 Air transportation (CS)
- 08.60 Recreation, culture and religion n.e.c. (CS)

It can be argued that all these classes envisage tourism industries more precisely Passenger transportation (road, water and air), Cultural industry and Sports and recreational industry. More precisely, these four refer to administration of affairs and services concerning operation, use, construction and maintenance of transport systems, supervision and regulation of transport operators, including licensing and inspection, preparation and enforcement of legislation and standards for the provision of recreational and cultural services (see Annex 6). Consequently, at central level at least, these are collective services benefiting only the companies belonging to the above mentioned tourism industries.

However, in case of transportation one can also be dealing with freight operators. Therefore a separation between passenger transportation and freight transportation is necessary. In a similar manner, religious affairs should be removed from the COFOG 08.60 Recreation, culture and religion n.e.c. In a practical manner, these adjustments can be made through applying what was called “Passenger transportation industry share in total transportation

industry” and “Recreation and culture share in total Recreation, culture and religious affairs”. These shares can be calculated based on the number of enterprises and organizations according with ÍSAT 2008 from the Enterprise Register of Internal Revenue Directorate (see Annex 9, table 3).

Applying this share is justified by the fact that regulations, licensing and similar services provided by the government are both for freight and passenger transportation companies and there is a necessity to find a way to differentiate between these categories; the same argument applies to the culture and recreation sector.

The next step is evidently to apply these shares (from Annex 9, table 3) to the corresponding COFOG categories. This was done for the period 2009-2013 (see table 22)

**Table 22:** Deriving Tourism Collective Consumption (TCC) in Iceland for the proposed category “Economic affairs envisaging some tourism industries” (central government only), 2009 – 2013.

	2009	2010	2011	2012	2013
					ISK mil.
04.51 Road transport (CS)	7,354.1	6,968.3	7,537.9	7,985	8,684.8
Road passenger transportation industry share	21.4%	21.8%	22.7%	23.9%	25.6%
<b>TCC for road passenger transportation</b>	<b>1,573.8</b>	<b>1,519.1</b>	<b>1,711.1</b>	<b>1,908.4</b>	<b>2,223.3</b>
04.52 Water transport (CS)	537	509.1	1,365.3	1,136.2	933.9
Water passenger transportation industry share	51.2%	54.5%	57.4%	60.0%	62.7%
<b>TCC for water passenger transportation</b>	<b>274.9</b>	<b>277.5</b>	<b>783.7</b>	<b>681.7</b>	<b>585.6</b>
04.54 Air transport (CS)	1,669.4	1,346.5	2,387.5	1,842.6	1,718.5
Air passenger transportation industry share	88.1%	88.9%	91.8%	92.6%	92.2%
<b>TCC for air passenger transportation</b>	<b>1,470.7</b>	<b>1,197.0</b>	<b>2,191.7</b>	<b>1,706.2</b>	<b>1,584.5</b>
08.60 Recreation, culture and religion n.e.c. (CS)	163.4	83.9	8.5	45.7	46.6
Recreation & Culture share	46.5%	46.7%	47.0%	47.0%	47.2%
<b>TCC for Recreation &amp; Culture</b>	<b>76.0</b>	<b>39.2</b>	<b>4.0</b>	<b>21.5</b>	<b>22.0</b>
<b>Total TCC for the category “Economic affairs envisaging some tourism industries”</b>	<b>3,395.4</b>	<b>3,032.8</b>	<b>4,690.5</b>	<b>4,317.8</b>	<b>4,415.4</b>

In addition, it might be proposed to apply the tourism consumption ratios from TSA (within each of the four tourism industries presented above), in order to have a “pure” tourism collective consumption. The main argument is the fact that not all the value of a collective service benefiting a tourism industry is automatically related to tourism consumption since every tourism industry has also a “non-touristic component”.

As an example, according to the first TSA for Iceland, the ratio for Culture and Recreation is 24% (Statistics Iceland, 2008, p. 18). Applying this ratio to TCC derived from Table 21 for the COFOG class 08.60 one can obtain 5.2 ISK mil. in 2012 as being a “pure” TCC related to 08.60 Recreation, culture and religion n.e.c. (CS). However, applying the tourism consumption ratios from TSA to the value of TCC of some categories was not used in the calculations in the section 4.2.3.2 because of lack of data (regarding tourism consumption shares from TSA) for the reference year 2012.

It should be remembered that the above calculations refer only to central government’s collective consumption as almost all COFOG classes from the proposed category “Economic

affairs envisaging some tourism industries” are services provided at national level (see also table 17). The collective consumption is only provided at local level for Road transportation. A different approach is envisaged in this case which foresees applying the so called “Icelandic overnights” ratio, (calculated as 5% for 2012 – see Annex 10) to the value of COFOG 04.51 Road transportation. Therefore, for 2012 the value of TCC for 04.51 Road transportation, local level, would be 5% of 7276.5 which is 363.8 ISK mil.

#### **4.2.2.2. Police services in the benefit of tourism: Keflavík Airport Police and Icelandic Coast Guard**

Only two institutions providing police services in Iceland were found relevant for tourism. These are Keflavík Airport Police and Icelandic Coast Guard. The former deals with border control while the latter deals with search and rescue services and airborne emergency services.

#### **Keflavík Airport Police**

Keflavík airport is the major entry and exit point to the country. It accounts for 96% of total foreign visitors arriving in Iceland. Border control is one of the services provided by the state at Keflavík airport. It is also a collective service tourists (both foreigners but also Icelanders) are benefiting from.

The border control at Keflavík airport is the responsibility of Keflavík Airport Police which is a division within Suðurnes Police (is. *Lögreglustjórinn á Suðurnesjum*). Estimating the cost of services provided by Keflavík Airport Police could be regarded as related to tourism since the airport is the main gateway to enter the country for foreign tourists.

It is important to notice that even if Iceland is a Schengen country and the border control for flights coming from the Schengen countries has been abolished, this service is still in place for people arriving/departing from/to non-Schengen countries (i.e. United Kingdom, United States and Canada). One can see that in fact in the last years almost half of the passengers at Keflavík airport are coming from non-Schengen countries (see table 23).

**Table 23:** Passengers’ traffic from outside Schengen area at Keflavík airport, 2009 – 2013.  
Source: Lögreglustjórinn á Suðurnesjum, 2014a

	2009	2010	2011	2012	2013
Total number of passengers in the airport terminal	1,658,419	1,791,419	2,112,017	2,380,214	2,751,743
Number of passengers travelling outside Schengen area	620,367	789,897	987,557	1,126,806	1,319,049
Share of traffic outside Schengen area	37.4%	44.1%	46.8%	47.3%	47.9%

One can see a significant increase of passengers’ traffic from areas outside Schengen from 620,367 in 2009 to 1,319,049 in 2013 which is in fact a doubling of the traffic. Following this

trend, it is important to add that the number of police officers for Keflavík Airport Division has increased from 20 in 2009 to 24 in 2013 (Lögreglustjórinn á Suðurnesjum, 2014a).

Of special importance in this context is the Suðurnes Police expenditure related to the Keflavík airport (Flugstöðvardeild) for the period 2009-2013 (see table 24). It should be noted that these expenditures do not include the “office work” for instance for the identification of persons who were arrested at the airport for carrying forged documents or illegal substance smuggling and more. These were estimated as up to 45% of the total operations. (Lögreglustjórinn á Suðurnesjum, 2014b) However, in order to keep a conservative approach these costs were not included reasonably assuming that tourists are not usually the perpetrators of crimes.

**Table 24:** The expenditures of Suðurnes Police for Keflavik airport division, 2009-2013.  
Source: Lögreglustjórinn á Suðurnesjum, 2014b

Years	Salaries	Other operations	Total expenditure for Keflavík Airport	Total expenditure for Suðurnes Police	Keflavík Airport share (%)
2009	172,549,180	33,291,966	<b>205,841,146</b>	961,149,821	<b>21.4</b>
2010	190,876,809	28,541,520	<b>219,418,329</b>	941,337,747	<b>23.3</b>
2011	214,778,594	22,640,478	<b>237,419,072</b>	965,485,229	<b>24.6</b>
2012	227,567,640	24,190,190	<b>251,757,830</b>	1,044,287,598	<b>24.1</b>
2013	266,452,678	27,880,230	<b>294,332,908</b>	1,123,872,078	<b>26.2</b>

One can see that the police expenditure at Keflavík Airport has constantly increased in the period 2009-2013 both in absolute figures and also in relative terms. This is evidently a consequence of the increase of traffic at the airport.

### ***Services provided by Icelandic Coast Guard<sup>16</sup>***

The Icelandic Coast Guard (is. *Landhelgisgæsla Íslands*) is a governmental agency that is responsible for maritime safety and security surveillance and law enforcement on the seas surrounding Iceland. It is also involved in **Search and Rescue (SAR) operations** both on sea and on land and **airborne emergency medical services**. In many cases, tourists are beneficiaries of such services. The Icelandic Coast Guard (ICG) has three rescue helicopters (LÍF, GNÁ, and SÝN) and a maritime surveillance aircraft. ICG also operates three vessels and one vessel for hydrographic surveying.

According to ICG, there is clear evidence that in many cases tourists are the subject of the rescue missions, both foreigners and Icelanders. Raw data from the Icelandic Coast Guard was used and processed in order to identify tourism-related cases/missions in which ICG was involved. The following basic criteria were used:

<sup>16</sup> The author wants to thank the Icelandic Coast Guard for providing access to their database. In particular Ásgrímur Ásgrímsson, Björgólfur Ingason and Thorben Lund are thanked. Special thanks are also due to Eyrún Jenný Bjarnadóttir who helped a great deal in identifying tourism related missions of the Icelandic Coast Guard.

- The majority of cases located in the wilderness were assumed to be tourism related, except when the description of missions would suggest something not related to tourism (i.e. incidents involving workers for the electric transmission system). This is termed *location criteria*.
- All cases involving passenger vessels (ships) on the sea (including cruise ships) were considered tourism-related.<sup>17</sup> The same applies for incidents on aircrafts of airlines. Obviously, the incidents related to fishing boats, cargo ships or cargo aircrafts were excluded. This is termed *Passenger transportation criteria*.
- All cases involving persons staying at summer-houses or located in a summer-house area were considered by default tourism-related. This is termed *Summer-house criteria*.
- All cases located in recreational areas including the ones located in the proximity of the capital area (Esja mountain, Helgafell mountain) were included even if this might raise some questions in relation to the everyday environment of Icelandic residents as opposed to being a tourist. The main argument is the fact that these areas are situated outside settled areas. This is termed *Recreational area criteria*.
- All cases describing recreational activities (e.g. horse-back riding, ice-climbing, skiing, trekking, kayaking) were considered tourism related even if their location, in very rare cases might be in the proximity of settled areas. This is termed *Recreational activity criteria*.
- All cases at famous tourist destinations were evidently included (e.g. Landmannalaugar, Geysir, Þingvellir) depending on the description of each case. This is termed *Tourist destination criteria*.
- In some cases, the nationality of patients (i.e. foreigners) determined if the case/mission could be seen as being tourism-related (e.g. foreigners in a rented car accident). This is termed *Patient information criteria*.

If locals were involved in a case (i.e. farmers, home-related accidents) they were excluded. Some missions/cases, mostly located on land (i.e. car accidents, sickness) were further analysed on a case by case basis from the office files of the ICG in order to distinguish between a tourism related incident and non-tourism related one. As a general rule, if no information was found to indicate a tourism-related case, these cases were not considered.

Applying the above criteria some tourism indicators have been calculated from the database of the Icelandic Coast Guard (see table 25). Among these, the most relevant for tourism analysis seems to be the “**Number of tourism-related rescued persons/patients**” which reflects the effectiveness of ICG missions for tourism. The evolution of this indicator seems to be in line with the increase of tourism in Iceland in the period 2009-2013.

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<sup>17</sup> All ships (names and registration numbers) were checked through the Icelandic ship register which is available at <http://www.fiskifrettir.is/skipaskra/377/>



**Table 25:** Tourism indicators derived from the activity of the Icelandic Coast Guard, 2009-2013.

*Source:* author's calculations upon internal data from the Icelandic Coast Guard

Derived indicators	2009	2010	2011	2012	2013
No. of tourism-related cases/missions (A)	58	54	74	78	77
Total number of cases/missions* (B)	136	188	155	173	195
Tourism-related share of cases/missions $I = (A)/(B)$	42.6%	28.7%	47.7%	45.1%	39.5%
No. of tourism cases involving Icelanders (D)	29	24	36	31	37
Share of Icelanders in total number of tourism-related cases/missions $I = (D)/(A)$	50.0%	44.4%	48.6%	39.7%	48.1%
No. of tourism related rescued persons/patients (F)	34	53	61	64	73
Total number of rescued persons/patients (G)	61	112	106	110	147
Tourism-related share of rescued persons/patients $(H) = (F)/(G)$	55.7%	47.3%	57.5%	58.2%	49.7%
No. of Icelandic rescued persons/patients in tourism-related cases/missions (I)	22	20	35	32	44
Share of Icelanders in the number of tourism related rescued persons/patients $(J) = (I)/(F)$	64.7%	37.7%	57.4%	50.0%	60.3%

\* - this number is in fact the total number of emergency calls (called "scrambles" by ICG). It should be stated that in several cases not all these emergency calls result effectively in intervention mission.

It is important to highlight the breakdown of tourism-related cases by locations and by types of rescue services (see table 26). One can see that more than a half of total tourism-related cases are located in the wilderness while incidents on sea are less represented. At the same time, both SAR and patient transportation (as types of services provided) are well represented in total tourism-related cases, accounting together for more than 90% in each year.

**Table 26:** Breakdown of tourism-related cases by location and by types of services.

*Source:* author's calculations upon internal data from the Icelandic Coast Guard

Derived indicators	2009	2010	2011	2012	2013
<b>No. of tourism-related cases/missions – total</b>	<b>58</b>	<b>54</b>	<b>74</b>	<b>78</b>	<b>77</b>
by location					
- Land (%)	17.2	24.1	28.4	37.2	29.9
- Wilderness (%)	63.8	64.8	58.1	51.3	59.7
- Sea (%)	19.0	11.1	13.5	11.5	10.4
by types of services					
- Search and Rescue (SAR) (%)	36.2	55.6	62.2	38.5	44.2
- Patient transport (%)	58.6	38.9	35.1	57.7	50.6
- Other (%)	5.2	5.6	2.7	3.8	5.2
Share of tourism-related cases in total ICG cases					
by location					
- Land (%)	28.6	20.6	36.8	42.6	30.3
- Wilderness (%)	77.1	61.4	89.6	76.9	73.0
- Sea (%)	20.8	8.8	20.0	17.0	14.3
by types of services					
- Search and Rescue (SAR) (%)	44.7	37.5	66.7	52.6	45.3
- Patient transport (%)	48.6	26.3	35.6	48.9	44.3
- Other (%)	15.8	10.7	15.4	12.5	12.5

Calculating the share of tourism-related cases in total cases/missions of ICG by location and types of services led to the following main findings:

- Tourism-related cases account for the great majority of ICG cases located in the wilderness (ranging from 61.4% in 2010 up to 89.6% in 2011)
- Tourism-related cases account for many of the ICG cases located on land (ranging from 20.6% in 2010 up to 42.6% in 2012)
- Search and Rescue (SAR) seems to be the type of service which is mostly oriented to tourism (ranging from 37.5% in 2010 up to 66.7% in 2011)

One of the main findings is that despite the fact that Icelandic tourism is mainly based on foreign visitors, Icelandic tourists are also well represented in the tourism-related missions of ICG. In fact, if we consider the share of Icelanders in the number of tourism related rescued persons one can see that except 2010 this share exceeds 50% or it is 50% as in 2012.

The final issue regarding the services provided by ICG refers to estimation of costs. There are several ways in this endeavour but the most conservative approach has been chosen since these costs are part of the aviation department within ICG. Until now, the number of tourism-related cases has been determined (see tables 25 and 26). Multiplying this with the average duration of flights (of the tourism related flights) gives us the number of tourism related flight-hours. Further, a share of tourism related flight-hours in total ICG flight-hours can be computed. In the end, applying this share to the total costs of the aviation department gives us the total costs of tourism related missions (flights) of ICG (see table 27).

**Table 27:** Calculating the cost of tourism related missions (flights) of ICG, 2009-2013.

*Source:* author's calculations upon internal data from the Icelandic Coast Guard

	2009	2010	2011	2012	2013
Number of tourism related cases	58	54	74	78	77
Average duration of tourism related flights (hours)*	2.1	2.1	2.3	2.4	2.4
Number of tourism related flight-hours	121.8	113.4	170.2	187.2	184.8
Total ICG flight-hours per year	900	847	995	935	869
Share of tourism related flight-hours in total ICG flight-hours	13.5%	13.4%	17.1%	20.0%	21.3%
Total aviation department costs (ISK mil.)	1,659	1,685	1,919	2,347	2,002
<b>Total cost of tourism related flights (as part of aviation department costs) (ISK mil.)</b>	<b>224.5</b>	<b>225.6</b>	<b>328.3</b>	<b>469.9</b>	<b>425.7</b>

\* - for 2013 this figure was calculated while for the period 2009-2012 estimates have been produced

One can notice that ICG cost of tourism-related flights exceeds 400 million ISK per year starting with 2012 but this has constantly increased starting with 2009. In other words, this is the amount paid by the Icelandic government for rescuing tourists both Icelanders and foreigners. They are also a form of estimating collective consumption for the benefit of tourism in Iceland.

According with COFOG classification, police services comprise among others the services of coast guards and border police maintained by public authorities (United Nations Statistics Division, 2014b). For Iceland, Icelandic Coast Guard and Keflavik Airport Police were considered to be the most relevant for tourism. Consequently, by adding the estimates of ICG

with the ones for Keflavik Airport Police, one can obtain the value of collective services representing police service in the benefit of tourism in Iceland (see table 28).

**Table 28:** Estimating the expenditure for Police services in the benefit of tourism in Iceland, 2009-2013.

	ISK mil.				
	2009	2010	2011	2012	2013
Keflavik Airport Police	205.8	219.4	237.4	251.8	294.3
Icelandic Coast Guard	224,5	225.6	328.3	469.9	425.7
<b>Police services in the benefit of tourism</b>	<b>430,3</b>	<b>445.0</b>	<b>565.7</b>	<b>721.7</b>	<b>720.0</b>
Total police services (COFOG 03.1)	10,537.8	9,553.6	10,561.6	11,330.5	11,433.2
Share of police services in the benefit of tourism in total police services	4.1%	4.7%	5.4%	6.4%	6.3%

#### *4.2.2.3. Research and development in tourism: Icelandic Tourism Research Centre & Rannís*

Icelandic Tourism Research Centre (ITRC) is the only institution in Iceland specialized in tourism research. It acts as a “collaborative project between the University of Iceland, the University of Akureyri, Hólar University, the Icelandic Tourist Board and the Icelandic Travel Industry Association, receiving funding and goodwill from all of these along with backing from government funds” (Icelandic Tourism Research Centre, 2014a).

Since ITRC receives contributions directly for the government, these are a form of governmental final consumption for research and development. Moreover, “COFOG 04.8.7 Research and Development other industries” includes “grants, loans or subsidies to support applied research and experimental development related to other sectors undertaken by non-government bodies such as research institutes and universities.” (United Nations Statistical Division, 2014b, p. n/a). In addition, the basic condition for R&D services to be considered collective services is that the results have to be freely available. This is particularly met by the ITRC which posts online every year the research reports of its studies funded by the government.

The budget of the ITRC is illustrative in identifying the governmental contribution for tourism research services in Iceland which is the partially coming from the Ministry of Education (see table 29). Thus, the figures showing the contribution from the Ministry of Education can be considered pure TCC.

Meanwhile, one can see the contribution of Icelandic companies belonging to the tourism industries in funding tourism research in 2013. It should be reminded that these are part of intermediate consumption of those companies according to national accounts procedures. Obviously, these should be put separately as a memorandum item, for analytical purposes according with TSA:RMF (2008).

**Table 29:** The breakdown of revenues of the Icelandic Tourism Research Centre, 2009 – 2013.

No		2009	2010	2011	2012	2013
1.	Ministry of Education	5,000,000	5,000,000	4,700,000	34,700,000	34,700,000
2	Contribution from its partners, out of which	5,750,000	5,750,000	5,750,000	5,750,000	6,750,000
	Universities (HI, HA, HH)*	3,750,000	3,750,000	3,750,000	3,750,000	4,750,000
	Icelandic Tourist Board	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
3.	All other funds, from which	16,572,383	16,894,461	-687,698	9,275,116	19,161,643
	- Research grants from international programs (NPP, NICE, etc.)	8,368,507	8,730,663	1,192,434	1,077,667	1,811,369
	- Municipalities	935,000	72,999	0	0	0
	- Companies belonging to tourism industries: Icelandair, Cruise Iceland	0	0	0	0	15,199,889
<b>TOTAL (1+2+3)</b>		<b>27,322,383</b>	<b>27,644,461</b>	<b>9,762,302</b>	<b>49,725,116</b>	<b>60,611,643</b>

Source: Icelandic Tourism Research Centre, 2014b

\* Háskóli Íslands, Háskólinn á Akureyri, Háskólinn á Hólum – in translation: University of Iceland, University in Akureyri and Holar University College.

In addition to the R&D activities of ITRC, one research project focusing on tourism was funded by Icelandic Research Fund from Rannís (Icelandic Centre for Research), a governmental agency which administers funds in the field of research and innovation. The project's name was "Tourism and periphery. The emergence and shaping of tourism in Iceland". This project was carried out in the period 2008-2010 by Gunnar Þór Jóhannesson at the University of Iceland. The total budget was 13,080,000 ISK out of which 4,200,000 ISK for 2008, 4,440,000 ISK for 2009 and 4,440,000 for 2010 (Rannís, 2014a).

Rannís also funded some tourism related projects through its Technology Development Fund. A list of ten projects were identified for Iceland in the period 2009-2013 (see Annex 11).

Evidently, one can sum up the figures regarding the Ministry's of Education contribution to the ITRC's budget (see table 30) with the figures from Rannís (see figures above and Annex 11). Thus, the values of governmental consumption in R&D in tourism for Iceland will be obtained (see table 30). It is important to mention that in order to have a conservative approach the grants awarded to students through the Icelandic Student Innovation Fund were not considered.

**Table 30:** The governmental final consumption for Research and Development in tourism, 2009 – 2013.

Source: compiled from Icelandic Tourism Research Centre, 2014b and Rannís, 2014a; b and Statistics Iceland, 2014b

ISK mil.

	2009	2010	2011	2012	2013
Icelandic Tourism Research Centre	5.0	5.0	4.7	34.7	34.7
Icelandic Research Fund - Rannís	4.44	4.44	0	0	0
Technology Development Fund - Rannís	18.0	32.5	39.2	34.5	16.0
<b>Total R &amp; D in tourism</b>	<b>27.44</b>	<b>41.94</b>	<b>43.9</b>	<b>69.2</b>	<b>50.7</b>
R & D Other industries (COFOG 04.87)	299.8	447	283.5	164.6	452.7
Total R & D	2992.7	3046.3	2981.1	3192.0	3493.5
Tourism research share in total R & D	0.9%	1.4%	1.5%	2.2%	1.5%

One can see when analysing the period 2009-2013 that governmental final consumption for R&D related to tourism have been increasing until 2012 but started to decrease a year after. Calculating tourism's share in total R&D for Iceland yields in 2009 only 0.9%. It increased up to 2.2% in 2012 but it decreased down to 1.5% in 2013.

#### 4.2.2.4. Statistics in tourism produced by Statistics Iceland

Statistics Iceland (Hagstofa Íslands) is the official producer of tourism statistics in Iceland. The governmental expenditure for official statistics is in fact showed by "COFOG 01.32 Overall planning and statistical services." Tourism statistics is obviously just a small part of this COFOG class. For the period 2009-2013 the cost for tourism statistics incurred by Statistics Iceland would comprise two main elements:

- producing Tourism Satellite Account
- producing Accommodation statistics

An estimated cost of these two elements was provided by Statistics Iceland for the period 2009 – 2013 (see table 31). One can see that for 2012 and 2013 there is no TSA cost for Statistics Iceland since TSA was not produced in Iceland in that period.

**Table 31:** Estimated costs for producing tourism statistics by Statistics Iceland, 2009-2013.  
Source: Statistics Iceland, 2014g

	ISK mil.				
	2009	2010	2011	2012	2013
Tourism Satellite Account	5	5	5	0	0
Accommodation statistics	10	10	10	12	12
<b>Total cost for producing tourism statistics by Statistics Iceland</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>12</b>	<b>12</b>
Overall planning and statistical services (CS) (COFOG 01.32) – Statistics Iceland	700.4	728.9	876.2	971.8	1,036.1
The share of the cost of producing tourism statistics within Statistics Iceland	2.4%	2.3%	1.9%	1.2%	1.2%

It is important to mention that these figures include mainly gross salaries but also Statistics Iceland's any other expenditure for operating the division in charge of tourism statistics (equivalent with the concept of intermediate consumption). These other expenses include travel cost of employees involved in producing tourism statistics, the fixed cost relating to housing and cleaning, cost for printing publications etc.

A share of the cost of producing tourism statistics in the total cost of producing statistics by Statistics Iceland has to be considered rather low (1-2%).

#### 4.2.2.5. The special case of a memorandum item for collective consumption

According to TSA:RMF (2008), a separate memorandum item is proposed for collective services financed by tourism industries and not by the government. Since they are not financed by the government, they do not fall in the government consumption concept. In Iceland, tourism promotion is such a service since the private sector contributes partly to the promotional activities undertaken by Promote Iceland (is. *Íslandsstofa*).

Promote Iceland is an institution established in 2010 as a public-private partnership with the goal of “promoting Iceland as a tourism destination, assisting in the promotion of Icelandic culture abroad and introducing Iceland as an attractive option for foreign direct investment” (Promote Iceland, 2014a). In fact, tourism promotion is just a division of the institution through the department of “Tourism and creative industries”. There are also separate departments for promotion of exports and foreign investments.

The total revenues of Promote Iceland in 2012 were 928.3 million ISK according to its annual report. However, the budget of Promote Iceland does not present separate figures for each departments. Moreover, the department of “Tourism and creative industries” is not only in charge of tourism promotion but also of other affairs: “The department also works on other marketing projects, relating to various fields, such as food, creative industries and health” (Promote Iceland, 2014a). Therefore, it is almost impossible to have a “pure figure” related only to activities for tourism promotion. Under these circumstances, the best approach is to look at individual marketing campaigns undertaken by Promote Iceland.

There were some marketing campaigns for tourism promotion in which Promote Iceland together with the private sector were involved. For instance the campaign entitled “Ísland – allt árið” (Iceland – all year) got from the private sector almost 260 mil. ISK per year in the period 2011-2013. Another campaign entitled “Iceland Naturally” was allocated 38 mil. ISK from the private sector in 2011, 39 mil. ISK in 2012 and 39.2 mil ISL in 2013.<sup>18</sup> So one might say that private sector contributed with almost 300 mil. ISK per year in the period 2011-2013 to these two marketing campaigns (see table 32). This data is treated as intermediate consumption of the industries (private sector) according to national accounts methodology.

**Table 32:** The contributions for tourism marketing campaigns carried out by Promote Iceland. Source: Promote Iceland, 2014b

	ISK mil.					
	2011		2012		2013	
	Ísland – allt árið	Iceland Naturally	Ísland – allt árið	Iceland Naturally	Ísland – allt árið	Iceland Naturally
Government	300	69	300	65.9	300	68.2
Reykjavík municipality	40	6.3	40	6.3	40	6.3
Private sector	260	38	260	39	260	39.2

<sup>18</sup> Information provided by Ms. Inga Hlín Pálsdóttir, Director of Tourism and creative industries, Promote Iceland.

The above figures do not include the tourism promotion of Iceland that the companies are doing on their own. Icelandair is the best example.

There are also other organisations involved in tourism promotion such as Meet in Reykjavik specialized in international marketing for the MICE segment. This organization received funds from both the public sector (e.g. Reykjavik municipality) and private sector such as the Icelandair group, Radisson BLU hotel, Grand hotel Reykjavik etc.<sup>19</sup> Reykjavik Convention Bureau also receives contribution from state-owned companies such as Harpa and Promote Iceland.

The breakdown of contributions from different associated partners of Meet in Reykjavik for the period 2012-2014<sup>20</sup> is presented in table 33. One can see that the private sector has the greatest contribution to the budget of Reykjavik Convention Bureau, followed closely by the municipality of Reykjavik.

**Table 33:** Contributions from associated partners of Meet in Reykjavik.

Source: Reykjavik Convention Bureau, 2014

	ISK mil.		
	2012	2013	2014
Municipality of Reykjavik*	45	43	42.25
Promote Iceland	-	12.50	12.5
Harpa	25	25	25
Private companies	49.5	46	48
<b>Total</b>	<b>119.5</b>	<b>126.50</b>	<b>127.75</b>

\* - includes also contributions received from Visit Reykjavik

Overall, if the private sector contributions' from Promote Iceland and Meet in Reykjavik are added, almost ISK 350 mil. is obtained per year in the period 2012-2013. For benchmarking purposes, in 2012 the expenditure of the central government on tourism according with COFOG category 04.73 Tourism (CS) was ISK 357.8 mil. (Statistics Iceland, 2014b). So, one must consider the contribution of the private sector as being very consistent.

In Iceland, the private sector also has participated in funding different tourism studies. For instance in 2012 Icelandair, Blue Lagoon, Europcar and ISAVIA commissioned the Boston Consulting Group to elaborate a strategy proposal named "Northern Sights: The future of tourism in Iceland". Another example is the Icelandic Travel Industry Association who participated in 2013-2014 in funding a study on tax evasion in tourism which was carried out by the University of Bifröst.

This section has proved that Iceland has some data to compile a memorandum item for tourism collective services within TSA table 9. It is worth mentioning that the contribution of the private sector for tourism promotion services reached 348.5 ISK mil. in 2012 according to the figures presented above and this does not include any other possible tourism promotional activities made by Icelandic companies on their own account. In 2013 the figure was 345.2 ISK mil. as private sector contribution in funding tourism promotion (see table 34). However,

<sup>19</sup> *Ibid.*

<sup>20</sup> This information was provided by Mr. Þorsteinn Örn Guðmundsson, Managing Director of Reykjavik Convention Bureau.

if in 2013 Research and Development in tourism is added then the total contribution of private sector in funding collective services with relevance for tourism amounted to 360.4 mil. ISK.

**Table 34:** The contributions of private sector in funding some collective services in Iceland, 2011 – 2013.

	ISK mil.		
	2011	2012	2013
1. Tourism promotion, out of which	298	348.5	345.2
Promote Iceland	298	299	299.2
Meet in Reykjavík	-	49.50	46
2. Research and development in tourism	0	0	15.2
<b>Total</b>	<b>298</b>	<b>348.5</b>	<b>360.4</b>

### 4.2.3. Experimental TSA tables

In this section the estimates of both Tourism Gross Fixed Capital Formation and Tourism Collective Consumption will be presented. The reference year is 2012, the last year when data is considered final according to Statistics Iceland.

#### *4.2.3.1. Tourism Gross Fixed Capital Formation in Iceland*

In compiling the table for TGFCF a sort of top-down approach was used. The starting point is simply to take the GFCF of several industries (of which tourism industries are part of). Then, an identification of precise tourism industries is needed (see table 35). It should be reminded that at present Statistics Iceland published data for GFCF on industries only at two digit level still following ÍSAT 95 and not ÍSAT 2008. This shortcoming of using the old classification has been solved following a conversion table of industries from ÍSAT 95 to ÍSAT 2008 which was provided by Statistics Iceland. The list of tourism industries defined at ÍSAT 2008 was also used (see: Frent, 2013, p. 88).

A matrix of assets and industries was also used for breaking down both the industries (in order to separately distinguish tourism industries) and the proposed categories of “fixed assets related to tourism” (see table 19). This matrix was also provided by Statistics Iceland especially for the purpose of this project. It should be reminded that the classification of assets is taken from the Enterprise Accounts Register.



**Table 35:** Identifying tourism industries among some activities defined at ÍSAT 95.

<b>Activities</b>	<b>ÍSAT codes of tourism industries included</b>	<b>ÍSAT codes of industries excluded</b>
50-52 Retail and wholesale	50.5	50.1, 50.2, 50.3, 50.4, 51, 52
55 Hotels and restaurants	55.11, 55.12, 55.21, 55.22, 55.23, 55.30.1, 55.30.2, 55.4, 55.51	55.52
60 Land transport; transport via pipelines	60.21, 60.22, 60.23	60.1, 60.24, 60.3
61 Water transport	61.1	61.2
62 Air transport	62.1, 62.2	62.3
63 Supporting and auxiliary transport activities; activities of travel agencies	63.3	63.1, 63.2, 63.4
71-72 Renting of machinery; Computer & related activities	71.1, 71.21, 71.40.9	71.22, 71.23, 71.3, 71.40.1, 72
92 Recreational, cultural and sporting activities	92.31, 92.32, 92.33, 92.34, 92.52, 92.53, 92.61, 92.62, 92.71, 92.72	92.1, 92.2, 92.4, 92.51
93 Other service activities	93.04	93.01, 93.02, 93.03, 93.05

The table for the compilation of TGFCF follows the structure proposed in section 4.2.1 (see table 20). The reference year was 2012. It should be noted that in terms of columns, the table is similar to the one proposed by TSA:RMF (2008) table 8 but in rows the level of detail is not similar since the assets classification in Iceland does not allow a good identification of “tourism specific assets”. Thus, a purpose-made classification entitled “Fixed assets related to tourism” was used instead. Also, the memorandum item as proposed by TSA:RMF (2008) table 8 is included. A simplified form is presented below (see table 36). For a complete form of this table detailing all tourism industries see Annex 12.

**Table 36:** Tourism Gross Fixed Capital Formation in Iceland, 2012 (a simplified table).

	<b>Tourism industries</b>	<b>Other industries</b>	<b>Tourism Gross Fixed Capital Formation</b>
	<b>(A)</b>	<b>(B)</b>	<b>(C) = (A) + (B)</b>
<b>I. Fixed assets related to tourism (1 + ... +4)</b>	<b>7,404.2</b>	<b>2,398.9</b>	<b>9,803.2</b>
1. Dwellings – vacation homes (summer houses)	-26.2	1,560.4	1,534.2
2. Hotels and restaurants	1,578.9	838.5	2,417.4
3. Other buildings and structures for tourism industries*	957.5	x	957.5
4. Passenger transport related to tourism	4,894.1	x	4,894.1
4.1. Motor vehicles for passenger transportation**	3,643.5	x	3,643.5
4.2. Aircrafts	1,063.1	x	1,063.1
4.3. Boats and ships	187.6	x	187.6
<b>II. Other assets part of Gross Fixed Capital Formation of Tourism Industries</b>	<b>3,414.4</b>	<b>x</b>	<b>3,414.4</b>
<b>III. Total Gross Fixed Capital Formation (I + II)</b>	<b>10,818.6</b>	<b>2,398.9</b>	<b>13,217.5</b>
<b>IV. Memorandum item</b>			
<b>Investment of tourism industries in non-produced non-financial assets</b>	<b>240.6</b>	<b>x</b>	<b>x</b>
Tangible assets (Land and building sites)	45.4	x	x
Intangible assets (Goodwill, Patents and trademarks, Copyright, Publishing rights, Other publishing entitlements)	195.2	x	x

x - does not apply

\* - includes offices, commercial buildings and other structures (constructions)

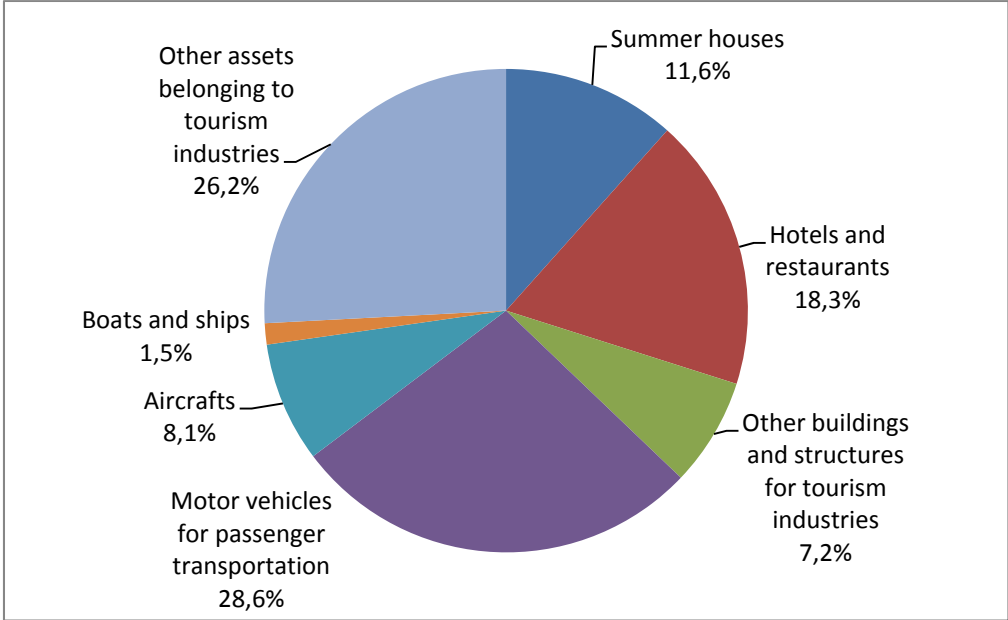
\*\* - includes taxis, buses, snowmobiles, ATVs and motorbikes, jeeps and other motor vehicles for less than 9 persons

An important remark refers to GFCF of tourism industries for summer houses which was - 26.2 ISK mil. This is not wrong but reflects the fact that during 2012 the value of sales of summer houses exceeded the value of purchases of summer houses by tourism industries. Even if this situation is very unlikely to occur at general macroeconomic level, at a more disaggregated level, this is possible due to the fact that Iceland doesn't have a big economy.

The figures from table 36 show the importance of “Investment of tourism industries in non-produced non-financial assets”, which is not considered within TGFCG. This is separately treated under the memorandum item (see table 36, item IV). For 2012, its value exceeded the value of TGFCF which shows the importance of this kind of investment for tourism industries in Iceland. However, this finding should be treated with caution due to its experimental nature.

It is important to see the breakdown of TGFCF by types of assets (see figure 3). The category “Motor vehicles for passenger transportation” accounts for most of TGFCF (28.6%). Next is Hotels and Restaurants (18.3%) and thereafter Summer houses (vacation homes) (11.6%). Aircrafts account for 8.1% while the residual category for different buildings/constructions belonging to tourism industries (named “Other buildings and structures for tourism industries”) has 7.2%. Boats and ships have a minor contribution, only 1.5%. Other assets not identified previously belonging to tourism industries account for more than one quarter respectively 26.2%.

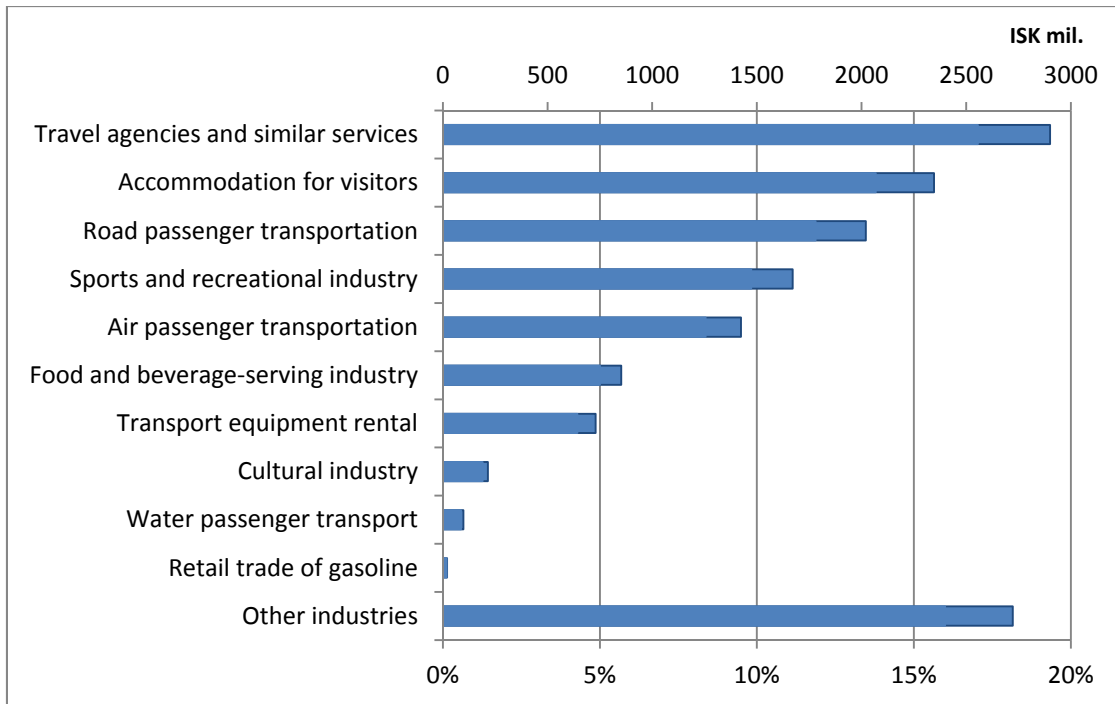
If one aggregates the types of assets in two major categories, a relatively balanced situation is observed between Construction (as a sum of Summer houses, Hotels and restaurants and Other buildings and structures for tourism industries) and Means of transportation. The latter accounting for 38.2% and the former accounting for 37.1% of total TGFCF.



**Figure 3:** Tourism Gross Fixed Capital Formation in Iceland by types of assets, 2012.  
 Source: *author's compilations*

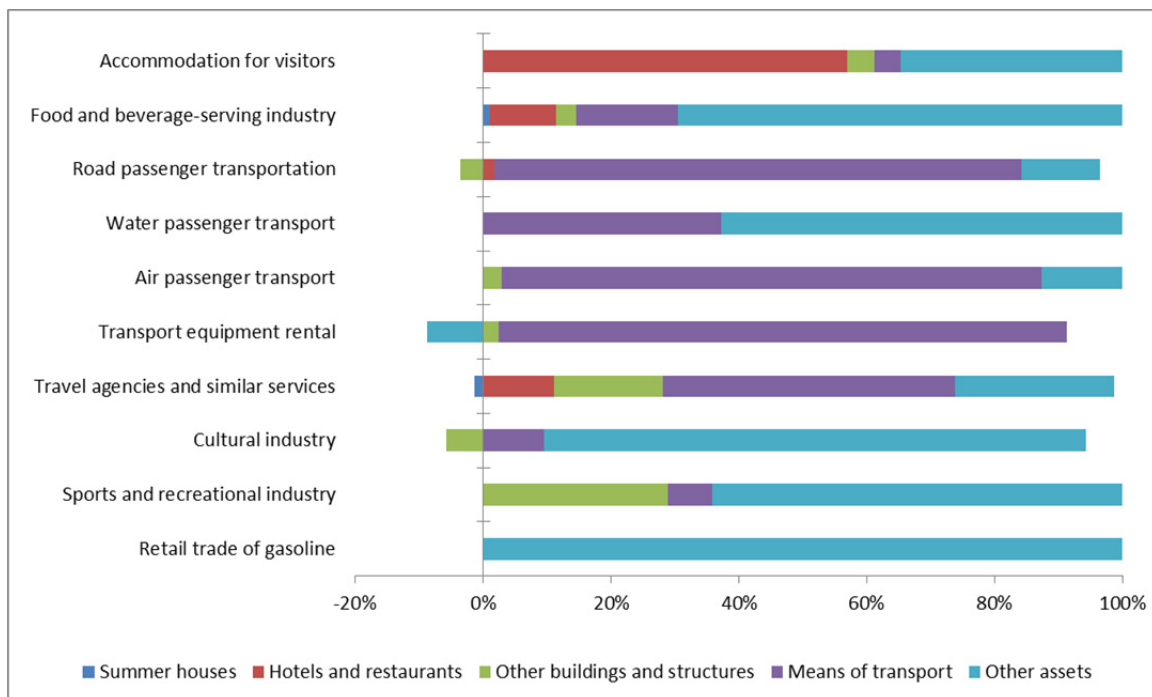
If one calculates the share of TGFCF in total GFCF of the Icelandic economy which was 283,456 mil. ISK in 2012 according to Statistics Iceland, a share of 4.7% is obtained. Another important observation is that all tourism industries account for 81.9% in total TGFCF while the rest (18.1%) is attributable to other industries. Travel agencies and Accommodation for visitors contributes each over 15% of the total TGFCF. At the bottom there are Retail trade of gasoline and Water passenger transportation which account for less than 1% of total TGFCF (see Figure 4).

It should be noted that vacation homes under full ownership of households are not included in the calculations due to lack of data from Statistics Iceland. At the same time, the governmental public investment for some tourism specific assets such as passenger terminals, docking and mooring facilities for ferries or cruise, museums, restoration of historical monuments, construction of swimming pools were not included in the calculation again due to lack of detailed data.



**Figure 4:** (Total) Tourism Gross Fixed Capital Formation in Iceland by industries, 2012.  
 Source: *author's compilations*

Along with Tourism Gross Fixed Capital Formation in Iceland by industries it is important to analyse the gross fixed capital formation of each tourism industry by types of assets. One can see there are significant differences from one tourism industry to another (see figure 5).



**Figure 5:** Gross Fixed Capital Formation of Tourism Industries in Iceland by types of assets, 2012.  
 Source: *author's compilations*

Summer houses as assets contribute little to the value of GFCF of the following industries: Accommodation for visitors, Travel agencies (a negative one) and Food and beverage industry. It should be reminded that these figures are not referring to summer-houses as assets owned by private individuals but owned by the businesses active in those tourism industries.

Evidently from figure 5, hotels and restaurants as types of assets are predominately in the Accommodation industry; also they have a small contribution to the GFCF of Travel agencies and Food and beverage industry.<sup>21</sup>

Means of transports as assets prevail in the tourism industries such as Air passenger transportation, Road passenger transportation and Transport equipment rental. They are also very well represented also for Travel agencies and Water passenger transportation.

Other buildings and structures are met in the Sport and recreational industry and in Travel agencies and similar services but less represented in the remaining tourism industries.

The residual category Other assets (part of GFCF) is dominating by the Cultural industry, Sports and recreational services, Water passenger transportation and the Food and beverage industry. This category is still important for other industries such as Accommodation for visitors, Travel agencies and to a lesser extent Road passenger transportation, Air passenger transportation and Transport equipment rental.

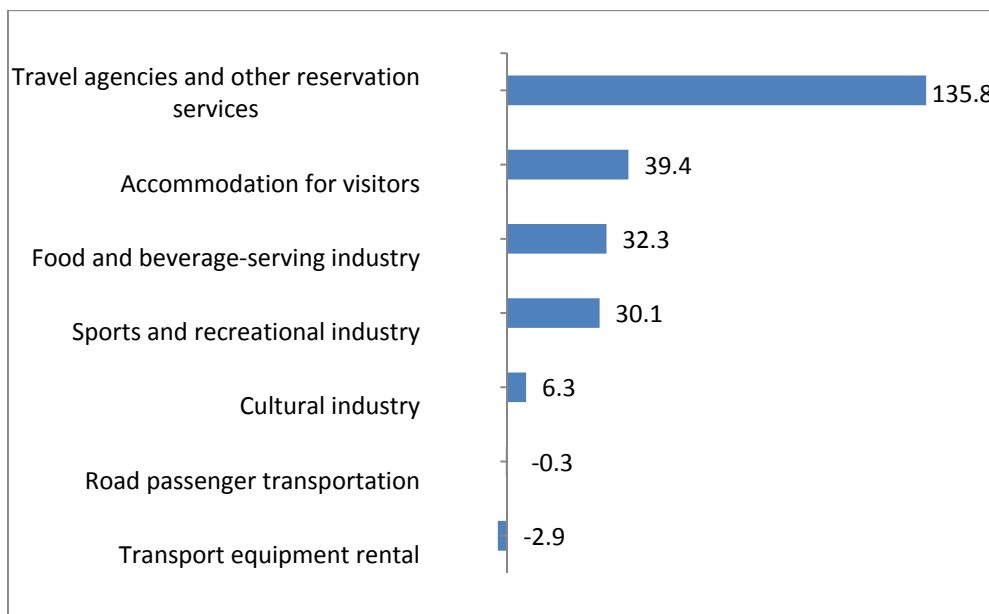
There are some tourism industries where GFCF is split between at least four types of categories of assets such as Travel agencies and similar services, Accommodation for visitors, Food and beverage and Road passenger transportation. At the opposite end there are industries with GFCF made up of one category of assets such as Retail trade of gasoline or two categories of assets in case of Water passenger transportation.

There are also negative contributions brought by some assets for four tourism industries: Other buildings and structures for Road passenger transportation and Cultural industry; Summerhouses for Travel agencies; Other assets for Transport equipment rental. In all cases, the significance is the following: the sales of these assets were smaller than purchases of these assets for each of the tourism industries mentioned.

The experimental table referring to TGFCF includes also a memorandum item for investments in non-produced non-financial assets (see table 36). However, even if the value of such investments is not too high (compared with data of GFCF) their importance is worth mentioning from an analytical point of view. Data for non-produced assets are available also by tourism industries (see Annex 12). Seven tourism industries in Iceland do have data on investments in non-produced assets (see figure 6).

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<sup>21</sup> From a certain perspective the Food and beverage industry could be seen as a rather strange situation but it can be explained by the fact that in many cases restaurants are in the same building either with accommodation establishments (and not counted separately) or with other kinds of buildings (i.e. offices, commercial spaces) and thus not counted separately as restaurants.



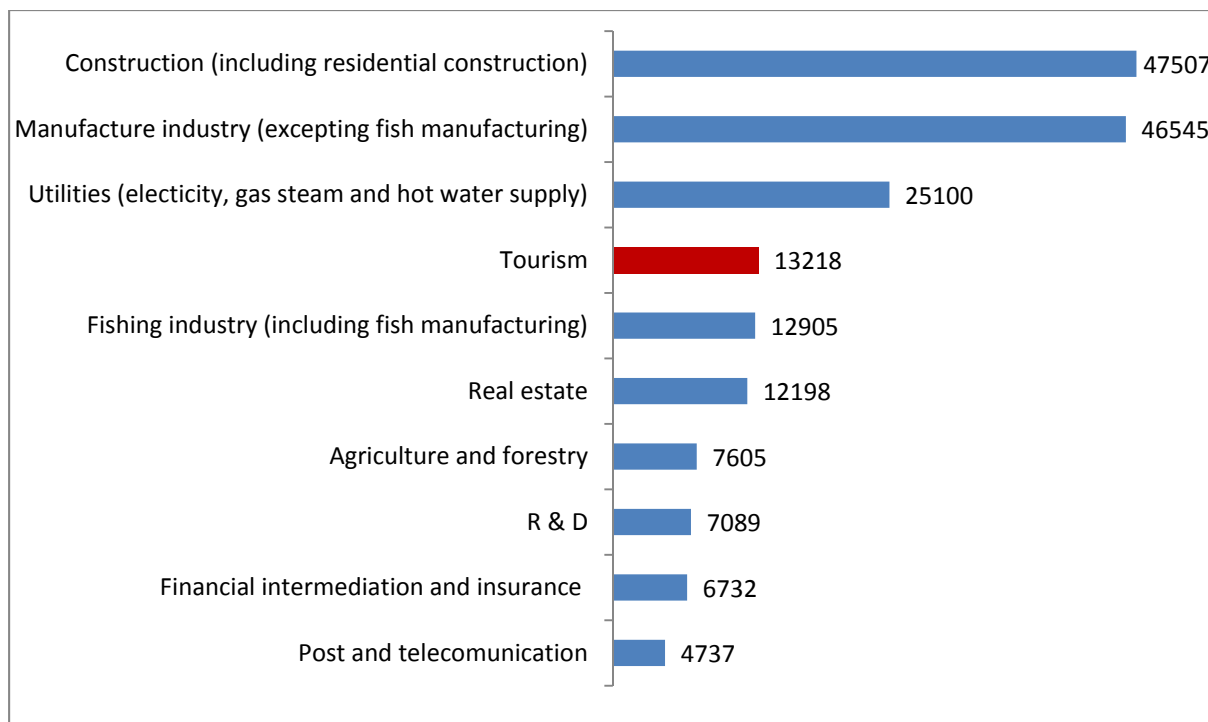
**Figure 6:** Investments made by some tourism industries in Iceland in non-produced assets, 2012 (ISK mil.).

Source: *author's compilations*

One can see in figure 6 that Travel agencies and other reservation services are by far the most intensive tourism industry in investments in non-produced assets accounting for 135.8 ISK mil. in 2012. This is followed by the Accommodation industry, Food and Beverage and Sports and recreational industry, each exceeding ISK 30 mil. Small negative values are posted for Road passenger transportation and Transport equipment rental.

For benchmarking purposes TGFCF can also be compared with GFCF of other economic sectors.<sup>22</sup> Ten economic sectors have been chosen including tourism (see figure 7). One can see that TGFCF ranks four after GFCF in the Manufacturing industry, Construction (including residential construction) and Utilities (electricity, gas stream and hot water supply). What is very important is the fact that tourism prevails over the fishing industry (including manufacturing of fish products) in terms of GFCF. Also tourism is superior to the following economic sectors: Real estate activities, Agriculture and forestry, Research and Development Financial services and insurance, Postal and telecommunication (see figure 7).

<sup>22</sup> In this comparison it has to be kept in mind that, apart from GFCF of tourism industries, TGFCF comprises also investment made by the other industries (other than tourism industries) in two categories of tourism specific assets: "Hotels and restaurants" and "Summer houses". Theoretically these other industries might also include the economic sectors presented in figure 7. Succinctly put, TGFCF might contain also "small portions" from investments made by other economic sectors as well. This is why this comparability should be taken with caution.



**Figure 7:** Gross Fixed Capital Formation in tourism and other economic sectors in Iceland, 2012 (ISK mil.).

Source: *authors compilations* and Statistics Iceland, 2014d

#### 4.2.3.2. Tourism Collective Consumption in Iceland

An experimental table was created for Tourism collective consumption in Iceland for the reference year 2012 (see table 37). Most of the data in this table comes from the tables presented in the section 4.2.2. and Annex 9.

One should notice that the structure of this table is broadly similar with the one proposed by TSA:RMF (2008) table 9. However, some difference can be seen in terms of classification of tourism collective consumption which in this case follows strictly COFOG classification and not CPC ver. 2 as proposed by TSA:RMF (2008). Also two additional rows were included for total collective consumption in Iceland and the share of tourism in total collective consumption. These cannot be seen as major departures from the standards.

**Table 37:** The structure of tourism collective consumption in Iceland following COFOG classification and by levels of government, 2012.

Source: own proposed compilation

ISK mil.

No	Category	Related COFOG		Levels of government			Memorandum item
		Code	Name	Central	Local	Total	
1.	<b>Specific tourism affairs</b>	04.73	Tourism (CS)	357.8	473.3	831.1	348.5
		<b>Part of</b>					
2.	<b>Economic affairs</b> envisaging several <b>tourism industries</b>	04.51	Road transport (CS)	1,908.4	363.8	2,272.2	x
		04.52	Water transport (CS)	681.7	0	681.7	x
		04.54	Air transport (CS)	1,706.2	0	1,706.2	x
		08.60	Recreation, culture and religion n.e.c. (CS)	21.5	0	21.5	x
3.	<b>Police services</b> in the benefit of tourists	03.10	Police services (CS)	721.7	0	721.7	x
4.	<b>Research and development</b> in tourism	04.87	R&D Other industries (CS)	69.2	0	69.2	0
5.	<b>Statistics in tourism</b> produced by Statistics Iceland	01.32	Overall planning and statistical services (CS)	12	0	12	x
<b>Total Tourism Collective Consumption</b>				<b>5,478.5</b>	<b>837.1</b>	<b>6,315.6</b>	x
Total collective consumption in Iceland				108,521.7	45,040.1	155,376.1*	x
<b>Share of tourism in total collective consumption in Iceland</b>				<b>5.0%</b>	<b>1.9%</b>	<b>4.1%</b>	<b>x</b>

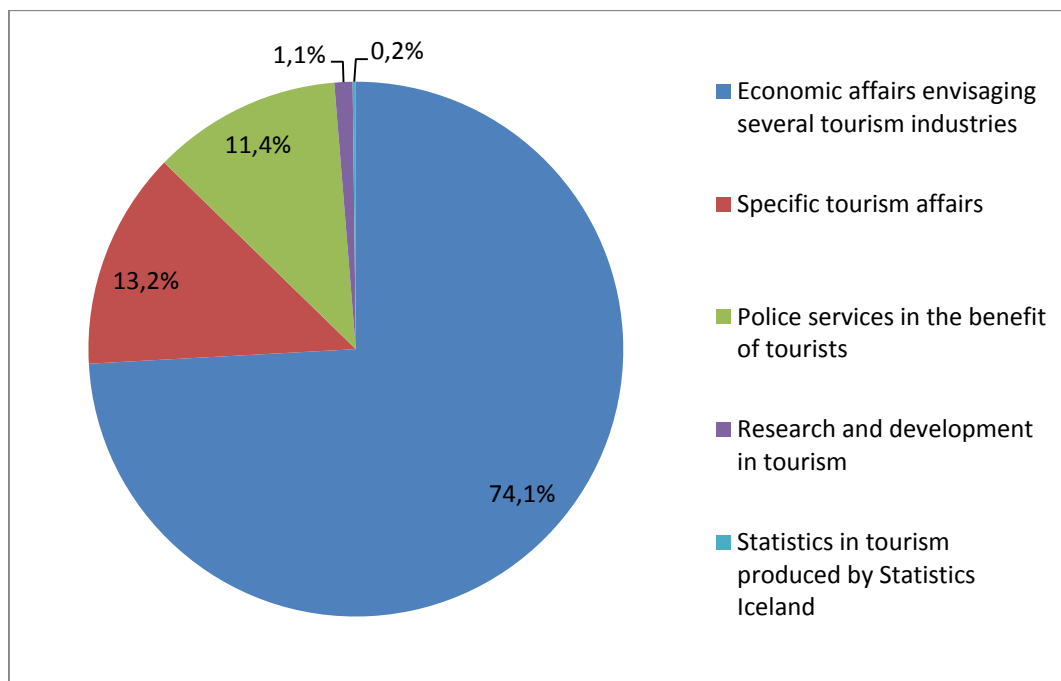
\* This total is not actually the sum between central government collective consumption and local government collective consumption but it is the figure representing total collective consumption in Iceland which includes not only those two elements but also social security funds.

x – does not apply

It is important also to highlight the structure of TCC by the five categories proposed (see Figure 8). One can see that the category “Economic affairs envisaging several tourism industries” accounts for most of TCC having a share of 74.1% in the total TCC. Opposite is the category “Statistics in tourism” which contributes only with 12 mil. ISK to the total TCC and represents only 0.2% of total TCC. The category of “Specific tourism affairs” is the second contributor to total TCC with 13.2% while “Police services in the benefit of tourism” accounts for 11.4% of total TCC. “Research and development in tourism” has a negligible share of only 1.1%.

Overall TCC represents 4.1% of total collective consumption in Iceland. However, at the central governmental level this share is higher (5.0%) while at local level it is only 1.9%. This is because in Iceland the majority of collective services which form TCC are provided at central level rather than local level (see table 37).





**Figure 8:** Tourism Collective Consumption in Iceland by categories, 2012.

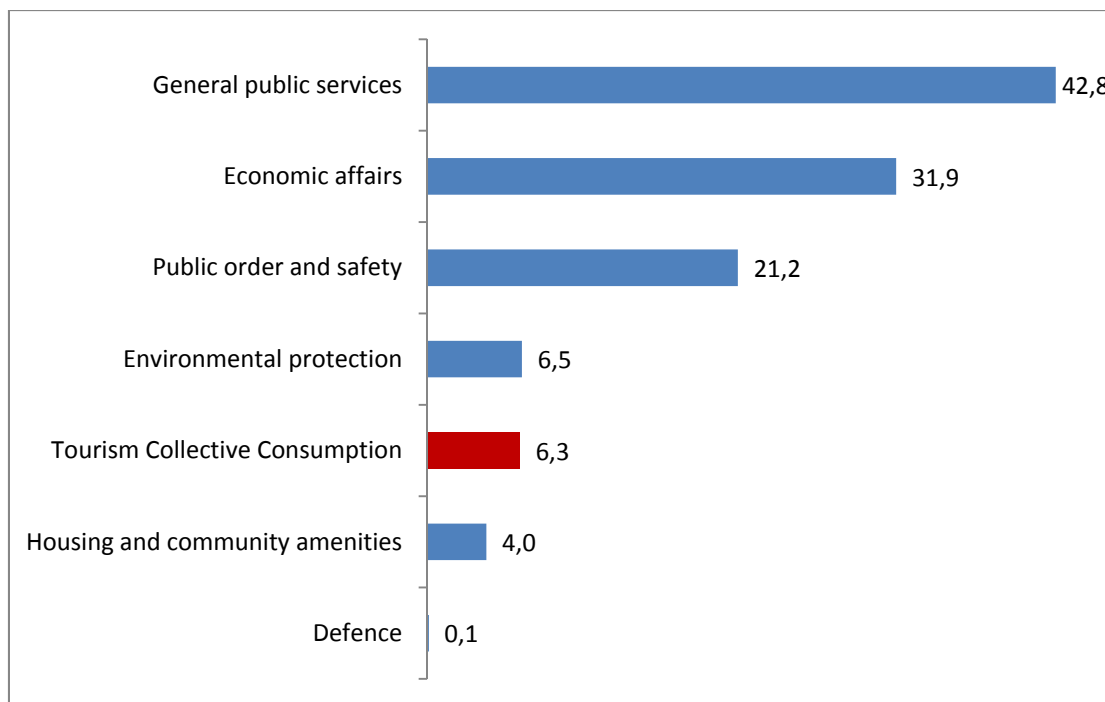
Source: *author's compilations*

In a similar manner with TGFCF, TCC can be benchmarked with other categories of collective consumption<sup>23</sup> (see figure 9). This is to see the importance of tourism compared with other economic domains (defined in accordance with COFOG classification by COFOG classes) where collective consumption occurs.

This benchmarking reveals that TCC is rather comparable with Icelandic governmental final consumption for environmental protection, although the figure is a little bit lower (6.3 ISK bn. compared with 6.5 ISK bn.). Also, TCC is higher than governmental final consumption for Housing and community amenities. At the same time, TCC is lower than the following COFOG classes: General public services, Economic affairs and Public order and safety.

As Iceland has no army, one can see that the governmental expenditure for defence is very small (0.1 ISK bn.).

<sup>23</sup> In this comparison one must be aware that as defined in this study TCC contains a small portion from the following COFOG classes: Public order and safety, Economic affairs and General public service. So the comparison cannot be made as a share in total collective consumption but only in absolute values or for benchmarking purposes.



**Figure 9:** Tourism Collective Consumption and other categories of collective consumption (COFOG classes) in Iceland, 2012 (ISK. bn.)

Source: *authors compilations* and Statistics Iceland, 2014a

### 4.3. Further research

The experimental calculations made above need further investigations both in the case of Tourism Gross Fixed Capital Formation and Tourism Collective Consumption. These will be separately treated as follows.

#### *Tourism Gross Fixed Capital Formation*

As already mentioned the data on Tourism Gross Fixed Capital Formation (TGFCF) did not include acquisitions less disposals of vacation homes by households. By the same token, it did not include major repairs to them incurred by owners. This should be part of ÍSAT 68.10. “Buying and selling of own real estate”. At this moment, Statistics Iceland did not have data in order to distinguish this very particular case. Further research is necessary to gather data on **acquisitions of vacation homes (summer houses) by individuals**. Registers Iceland can be investigated as a possible data sources in this regard.

Another issue is relating to the fact there cannot be any distinction made in the case of acquisitions of boats and ships used for passenger transportation and the ones used for other purposes (i.e. freight); the same applies to aircrafts. This is the reason why the investments of the rest of industries (other the tourism industries) in these types of assets were not considered. More research is needed to **separate passenger transportation assets from freight**

**transportation assets.** One possibility would be to look in parallel, on individual basis at the registers of aircrafts and the registers of boats which are held by competent institutions such as the Icelandic Transport Authority. Around 1,200 open boats and 1,100 decked vessels are registered in Iceland; there were also 363 aircrafts (Icelandic Transport Authority, 2014a; b).

Gross fixed capital formation of the government in some tourism specific assets was not included in the calculations due to lack of relevant data. These would refer to passenger terminals, different facilities for docking cruise ships, museums and cultural facilities used by tourists and the construction of swimming pools. Also, to a larger extent investment in the so called tourism-related infrastructure is not yet proposed by TSA:RMF (2008). Further research is necessary in case of **governmental investments in both tourism-specific assets and in providing the basic infrastructure at tourism destinations.** A separate approach is need for the central government and for the local government.

It is necessary to investigate also the **investment of non-governmental sector** which might be in the benefit of tourism (for instance Labour Unions) but also of some **public companies** such as ISAVIA, the operator of Iceland's airports. These companies are not part of tourism industries as defined by international standards but they might represent in some cases big investors for tourism in Iceland.

TSA:RMF (2008) proposes several categories for tourism-specific assets (see 2.1.1). However, in Iceland many of these categories cannot be separately identified considering the existing data sources. This is the case of "Buildings and infrastructures of long distance transport of passengers", "Buildings for cultural and similar services mainly for use by visitors", "Facilities for sports, recreation and entertainment", "Other machinery and equipment specialized for the production of tourism characteristic products" and "Improvement of land used for tourism purposes". Therefore, a simplified classification was adopted which restricted somewhat the coverage of TGFCF in Iceland. Due to this fact the final results should be interpreted with caution since investments made by non-tourism industries in these assets are not considered. Further research is needed to **identify some tourism specific assets such as cultural and sport facilities used by visitors or infrastructures for long distance transport of passengers** (e.g. passenger terminals, docking and similar facilities for cruises and ferries).

#### *Tourism Collective Consumption*

The proposed approach in case of Tourism Collective Consumption was based exclusively on the conceptual framework for provision of collective services by the government (collective consumption). In some instances, the approach may be extended in order to **incorporate services which are not subsidized by the government and/or are provided free of charge.** However, it should be noted that in this case the scope will exceed TSA:RMF (2008) since no governmental consumption will be involved.

The best example is the Icelandic Association for Search & Rescue ICE-SAR a non-profit association providing mountain rescue service. This is an association of volunteers who have the mission "to save human lives and valuables and prevent accidents" (ICE-SAR, 2014).

There are around 100 rescue teams of volunteers. The cost of rescue missions incurred on this association should also be considered. It should be noted that mountain rescue services are part of COFOG 03.20 Fire protection services (CS).

Another service provided free of charge is the provision of statistics on credit and debit card turnover of foreign visitors. These are produced by the Centre for Retail Studies at the University of Bifröst which is an institution that does not belong to the government sector. In fact, Centre for Retail Studies is a foundation whose owners are coming from academia (Bifröst University), unions (VR – Commercial and office workers’ union), professional associations (Federation of Trade and Services, Motor Trade Federation, Retailers’ Association) and a governmental body (Ministry of Industry and Innovation). Evidently, the cost of these statistics provided free of charge to interested parties should be included separately outside the concept of governmental collective consumption. Roughly, these costs were estimated as being 2 million ISK per year.<sup>24</sup>

Thus, an extension of the existing conceptual framework might be necessary to include the **non-governmental sector that provides collective services**. As shown above, in Iceland tourism statistics on payment card turnover and mountain rescue services are such services.

As the institution responsible for promoting Iceland abroad, Promote Iceland, gets funds from both public and private sector, the funds specifically addressed to tourism promotion from the governmental sector should be separate from the ones received from the private sector. Obviously, only the funds from the public sector are part of Tourism Collective Consumption. These should be part of the COFOG class 04.73 Tourism. At present, this is not the case since the governmental funds allocated to Promote Iceland are included in the COFOG 04.11 General economic and commercial affairs since no detailed good data is available.<sup>25</sup>

As shown in table 31 Promote Iceland does receive funds from the government. However, it is not clear yet whether these allocations are made directly or through different institutions. This is to avoid the risk of double-counting. Anyway, more research is needed to see **the precise modality of receiving funds from the state in case of Promote Iceland**. Only if a direct allocation from the government can be identified then those funds received by Promote Iceland for the marketing campaigns would be added to the COFOG 04.73 Tourism.

The recommendation is that Promote Iceland should provide more detailed reliable data from their budget to separately identify tourism promotional activities. If no such data is available from their accounts, then estimations should be made. It would be in the benefit of both the government and of the private sector to know exactly the precise funds allocated for tourism promotion activities of Iceland.

Apart from Promote Iceland, some big tourism companies like Icelandair also undertake promotional activities of Iceland as a tourism destination at their own expenses (for instance through magazines placed in the seat pocket of each seat of the aircraft). Icelandair also

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<sup>24</sup> This estimation was confirmed by Emil B. Karlsson, Director at Centre of Retail Studies.

<sup>25</sup> This information was provided by Hólmfríður S. Sigurðardóttir from National Accounts and the public finance department within Statistics Iceland.

supports some international music festivals (like Iceland Airwaves) aiming to attract more visitors to the country. Certainly, these expenditures (or at least most part of them) can be considered tourism related. More research is necessary to **distinguish all types of promotional activities related to tourism performed by private companies**. Further, the expenditure related for these promotional activities should be estimated and separately presented in order to highlight the importance of tourism promotion undertaken by the private sector.

At the local level, there is a need to properly register all tourism related expenditure. There might be a diversity of expenditure incurred by municipalities in the benefit of tourism which are not recorded as tourism related. For instance, there is the collection of waste from recreational areas used by tourists or maintenance and cleaning of public parks. Obviously, one must admit that there are not only tourists benefiting from these services but also residents. Therefore, more research is needed at local level in order to **identify all the public expenditures related to tourism made by local authorities**.

In estimating different categories of collective consumption for tourism, only for one category namely “Economic affairs envisaging some tourism industries”, a sort of top-down approach was used using tourism ratios (see: 4.2.2.1). One must admit that from a certain perspective this can be seen somehow as a simplistic solution. More research is necessary to **analyse in detail the real relation with tourism for each institution involved in providing those services in Iceland (i.e. Icelandic Road and Coastal Administration, Icelandic Transport Authority)**. These institutions provide the regulatory framework for the companies involved in tourism industries as well as administration of affairs concerning “operation, use construction and maintenance of transport systems and facilities” (Eurostat, 2011, p. 165). However, it is not clear yet if these kinds of services can be identified separately in the budgets of these institutions.

More research is needed to **capture the “real” tourism collective consumption by analysing the possibility of using tourism consumption shares from TSA**. This is particularly the case when the beneficiaries of these services are tourism industries which have also a “non-touristic component”. More precisely, this is the case of the collective services within the proposed category of “Economic affairs envisaging some tourism industries”. For instance, in case of the cultural industry since not all production is related to tourism one might say that the collective services provided for this industry is tourism related but only a share of it. Anyway, more investigations are necessary in this domain.

All issues presented in this section could also be seen as future improvements which can be applied to the proposed compilation procedures for calculating both Tourism Gross Fixed Capital Formation and Tourism Collective Consumption in Iceland. At the same time, they might represent discussion points for enhancing the conceptual and methodological approach proposed.

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Compiling Tourism Gross Fixed Capital Formation and Tourism Collective Consumption for Iceland is not as straightforward as it might seem. First of all, the level of development of data from National Accounts should be envisaged and in many cases it might act as a major constraint. Nevertheless, a detailed compilation procedure was developed both for TGFCF and/or TCC from existing data sources. Consequently, some experimental TSA data were obtained. Moreover, further research on this topic was also included in order to point out the major improvements necessary to have better statistical TSA data in Iceland in the future.

## 5. Conclusions

In the last years tourism has been greatly boosted in Iceland. There is a need to better understand the economic benefits of tourism. The Tourism Satellite Account (TSA) provides a statistical tool, officially standardized at international level to quantify in a very comprehensive way the economic contribution of tourism. It provides also key figures about the size of tourism in the national economy.

Statistics Iceland, as an official producer of statistical data has embraced the TSA system and in the period 2008-2011 had published TSA data through three publications. However, none of these publications included TSA data referring to Tourism Gross Fixed Capital Formation (TGFCF) and Tourism Collective Consumption (TCC). In fact, these two aggregates are not recommended by international standards (i.e. TSA:RMF, 2008) to be compiled in an initial stage of TSA elaboration but only in an advanced stage of TSA development. But this should not be seen as a deterrent. The major aim of this study was to investigate the possibility of compiling these two aggregates in Iceland.

TGFCF and TCC are considered by TSA:RMF (2008) as other components of Total Tourism Demand (TTD). Internal Tourism Consumption (not envisaged in this study but compiled by Statistics Iceland in the former Icelandic TSAs) is the third component of TTD. However, in this study the calculation of TTD for Iceland was impossible as there is no data on Internal Tourism Consumption for the reference year 2012, the year for which the calculation of TGFCF and TCC was experimented within the related TSA tables. When in the near future, the new TSA estimates for Iceland will become available, then this exercise might also be envisaged.

This study has revealed that there are certain possibilities to boost the future Icelandic TSA in order to incorporate estimates referring to investments and governmental consumption for collective services related to tourism.

The starting point was to investigate the methodological framework proposed by international standards, namely TSA:RMF (2008). Some extensions to these standards were also considered and proposed by the author. More precisely, a conceptual proposal envisaged TGFCF to be defined following CPC ver. 2 classification while another one referred to the identification of other non-market collective services following the same CPC ver. 2 classification; the last conceptual proposal envisaged using COFOG classification for defining Tourism Collective Consumption. With reference to the Icelandic statistical reality only the last conceptual proposal was possible to be used in Iceland (and approached, see: 4.2.2).

Although not directly related to the Icelandic TSA, a section of this study was devoted to describing the experience of some countries in compiling estimates of TGFCF and TCC. Both European and non-European countries were envisaged. Consequently, it was revealed that a number of 24 countries around the world have developed TGFCF and/or TCC in one way or another. Considering that over 60 countries worldwide have TSAs according to the most recent UNWTO estimate, one might say that more than one third of these countries

approached TGFCF and/or TCC. Another finding was that in many cases major departures from international standards have been identified. The most common departure referred to classification of tourism specific assets in case of TGFCF and classification by level of government for TCC. In both cases the memorandum items, to be added to the estimates as proposed by TSA:RMF (2008), is lacking in almost all countries analysed. Anyway, an important documentation to benchmark the development of TSA estimates for TGFCF and TCC in different countries against international standards has been provided.

The core part of the study produced estimates on TGFCF and TCC for Iceland. These were based on the existing data sources from the Icelandic statistical system as available in the year 2014, when this study was conducted. In this endeavour, first a compilation procedure was proposed and described. Following this, some estimates were compiled on an experimental basis. Lastly, the need for further research in this field has been detailed for different topics.

If one compares the findings obtained in this study for Iceland with the situation in other countries, some advancement might be noticed. For instance, the memorandum item for TCC was included in the Icelandic estimates proving that the private sector has an important contribution to tourism promotion. Among the countries analysed none have proved such estimates (but to be fair one must admit Iceland's specificity in this field as a main reason); the same might apply for TGFCF despite the experimental character of figures.

This study has proved that compiling TGFCF and TCC might be a feasible option even if there are evident constraints in terms of availability of some data sources in Iceland. One might consider that the foundation for compilation of these new aggregates has been set and the future TSA compilation in this country might adopt and/or improve the proposed approach.

Nevertheless, an adaptation to local statistical realities of Iceland is always necessary and this was also carried out in the proposed compilation methodology. For instance, the classification of tourism specific assets from TSA:RMF (2008) was simplified and modified becoming a classification of "Fixed assets related to tourism"; in the same way, in case of TCC a new prototype TSA table was proposed for identifying the structure of collective consumption "largely related to tourism". Under no circumstances should these be considered departures from international standards but rather additional elements which facilitate the data compilation process adapted to the Icelandic situation.

The findings in this study might also strongly encourage other countries to approach the development of estimates envisaging tourism investments and governmental collective consumption of collective services in the benefit of tourism. It is time to start overcoming the conceptual and methodological challenges and producing estimates on TGFCF and TCC even if on experimental basis at the very beginning. These would have the potential to foster discussions and exchanges of practices between countries which in the end might lead to the enforcement of these aggregates in the methodology of TSAs.

Moreover, by going "beyond TSA:RMF (2008)" a contribution to the need to expand the existing framework has been provided. It also provided alternative solutions such as the usage of COFOG classification instead CPC Ver. 2 classification in defining TCC. This approach



has been successfully experimented with in the Icelandic context due to a very pragmatic reason: Iceland is using COFOG (and not CPC) at a very detailed level for classifying the governmental final consumption.

This study has shown that for a small economy like Iceland despite shortages in some data sources, the compilation of TFCF and TCC is conceivable. However, one must be aware of the limitations available and to work on some improvements to overcome them. Only through continuous development will the Icelandic TSA be able to expand its capabilities to show the real economic significance of tourism. Now it is up to decision-makers to support the production of future TSA estimates for Iceland considering also the proposed TSA developments presented herein.



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# Annexes

## Annex 1. List of meetings and correspondences with key persons

No	Organization	Date and time	Name of person and position/department	Topic discussed
<b>List of meetings</b>				
1.	Statistics Iceland	25 September, 15-16 27 October, 10.30 – 11.30	Böðvar Þórisson Director <b>Business Statistics</b>	Practicalities on the future TSA compilation for Iceland
2.	Statistics Iceland	7 October, 10-11	Hólmfríður S. Sigurðardóttir and Gunnar Axel Axelsson <b>National Accounts and Public Finance</b>	Collective consumption related to tourism
3.	Statistics Iceland	8 October, 14-15	Jón Ævarr Sigurbjörnsson <b>National Accounts and Public Finance</b>	Gross fixed capital formation (investments) related to tourism
4.	Icelandic Association of Local Authorities	29 October, 14-15	<b>Gunnlaugur Júlíusson</b> , Director Business and IT	Data from Local Authorities' Reporting Unit (is. <i>Upplýsingaveita sveitarfélaga</i> )
5	Icelandic Coast Guard	4 November, 14-15 November 29 November 1 December	<b>Ásgrímur Ásgrímsson</b> Chief of operations <b>Björgólfur Ingason</b> Controller HQ Operations, Maritime Traffic Service	Relevance for tourism of ICG's operations Identification of some tourism related cases
<b>Correspondences (by email and/or phone)</b>				
1.	ISAVIA	21-24 October	<b>Grétar Már Garðarsson</b> Project Manager for Business Development	ISAVIA's activities on security issues for international flights
2.	Suðurnes District Police – Airport Division Keflavík airport	21-23 October 27 November – 3 December	<b>Jón Pétur Jónsson</b> Superintendent <b>Gunnar Björnsson</b> Financial officer	Police services at Keflavík airport
3.	Icelandic Coast Guard	23 October	<b>Snorre Greil</b> <b>Ásgrímur Ásgrímsson</b> Chief of operations	Information about Coast Guard activities related to rescue missions for tourists
4.	Promote Iceland	24-27 October	<b>Inga Hlín Pálsdóttir</b> , Director, Tourism and creative industries	The budget for tourism promotion
5.	Centre for Retail Studies – University of Bifröst	28-29 October	<b>Emil B. Karlsson</b> Director	Details about statistics on credit card turnover from foreign tourists
6.	Suðurnes District Police	11 November	<b>Gunnar Björnsson</b> Financial officer	The budget of Keflavík Airport Police
7.	Meet in Reykjavík – Reykjavík Convention Bureau	4 - 14 November	<b>Þorsteinn Örn Guðmundsson</b> , Managing Director	The budget breakdown of Reykjavík Convention Bureau
8.	Rannís – The Icelandic Centre of Research	25 - 26 November	<b>Ragnhildur I. Guðmundsdóttir</b> Project manager	Projects funded by Rannís which envisaged tourism



## Annex 2. Detailing the list of tourism-specific fixed assets from TSA:RMF (2008)

No.	Categories	No.	Subcategories	Explanations
1.	Accommodation for visitors	1.1.	Hotels and other accommodation facilities for visitors	Hotels, motels, inns, youth hostels, mountain shelters, camping sites, holiday camps and villages, bed and breakfasts, etc.
		1.2.	Vacation homes under full ownership	All types of dwellings used as vacation homes and that are fully owned by the household.
		1.3.	Vacation homes under other types of ownership	All assets used for other types of vacation home ownership, such as time-shares, fractional ownership, residence hotels, etc.
2.	Other non-residential buildings and structures proper to tourism industries	2.1.	Restaurants and similar buildings for food-and beverage-serving services	Restaurants, cafes, bars and self-service establishments (nightclubs, discotheques, etc.)
		2.2.	Buildings and infrastructure for the long distance transport of passengers	Passenger terminals, electric lines for long distance railways specifically for passenger transport, construction of docking and mooring facilities for passenger ferries or cruise ships etc.
		2.3.	Buildings for cultural and similar services mainly for use by visitors	Restoration of historical monuments, tourism sites etc.
		2.4.	Facilities for sport, recreation and entertainment	Construction of swimming pools or any other amenities for the recreation of guests in hotels or resorts, construction of zoos and attraction parks, ski resorts, marinas, golf courses, etc.
		2.5.	Other facilities and structures	<i>Not specified by TSA:RMF (2008)</i>
3.	Passenger transport equipment for tourism purposes	3.1.	Land (including road and rail)	(a) Road transport (inter-urban coaches, sightseeing coaches, etc.) (b) Railway passenger transport (locomotives, diesel trains, passenger wagons except for commuter trains, etc.)
		3.2.	Sea	Passenger and vehicle ferries, cruise ships and yachts, etc.
		3.3.	Air	Aircrafts, gliders and hang-gliders, observation balloons and airships, luggage transport vehicles, helicopters, etc.
4.	Other machinery and equipment specialized for the production of tourism characteristic products		<i>Not provided by TSA:RMF (2008)</i>	All capital goods not included in other headings and specifically associated with the provision of services to visitors by the tourism industries, such as equipment for the industrial preparation of food in restaurants, special equipment for passenger terminals, equipment and furniture for hotels and restaurants, sport equipment etc.
5.	Improvements of land used for tourism purposes		<i>Not provided by TSA:RMF (2008)</i>	Recuperation of land from the sea by the construction of dykes, retaining walls or dams, ecological clearing of forests, etc. in order to permit this land to be used for tourism purposes.

Source: TSA:RMF, 2008, pp. 98-99



### Annex 3. The correspondence between the classification of fixed assets according to CPC ver. 2 and the classification of tourism-specific assets from TSA:RMF (2008)

No	SNA (2008) categorization of fixed assets	CPC Ver. 2 (part of)	Tourism-specific assets
1.	<b>Dwellings</b>	5311 Residential buildings 3870 Prefabricated buildings	Vacation homes (all types of ownership)
2.	<b>Other buildings and structures</b>		
2.1.	Buildings other than dwellings	53129 Other non-residential buildings  53122 Commercial buildings	Hotels and other accommodation facilities for visitors Restaurants and similar buildings for food-and beverage-serving services Buildings for cultural and similar services mainly for use by visitors Facilities for sport, recreation and entertainment (only indoor)  Buildings and infrastructure for the long distance transport of passengers (i.e. passenger transport terminals) Other facilities and structures (i.e. for shopping centres)
2.2.	Other structures	5321 Highways (except elevated highways), streets and roads 5322 Bridges, elevated highways and tunnels 53232 Harbours, waterways and related facilities 53270 Outdoor sport and recreation facilities	Buildings and infrastructure for the long distance transport of passengers  Facilities for sport, recreation and entertainment
2.3.	Land improvements	54320 Site formation and clearance services	Improvements of land used for tourism purposes
3.	<b>Machinery and equipment</b>		
	Transport equipment	49113 Motor cars and other motor vehicles principally designed for the transport of persons 49116 Motor vehicles, for the transport of persons, specially designed for travelling on snow; golf cars and similar vehicles 49222 Trailer and semi-trailers of the caravan type, for housing or camping 495 Railway and tramway locomotives and rolling stock, and parts thereof 4991 Motorcycles and side-cars 49921 Bicycles and other cycles, not motorized 49311 Cruise ships, excursion boats and similar vessels, principally designed for the transport of persons; ferry boats of all kinds	Passenger transport equipment: Land          Sea

No	SNA (2008) categorization of fixed assets	CPC Ver. 2 (part of)	Tourism-specific assets
		494 Pleasure and sporting boats 4961 Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft 4962 Aeroplanes and helicopters	Air
	Other machinery and equipment	43 General-purpose machinery 44 Special purpose machinery 45 Office, accounting and computing equipment 46 Electrical machinery and apparatus 47 Radio, television and communication equipment and apparatus 48 Medical appliances, precision and optical instruments, watches and clocks 381 Furniture 383 Musical instruments 384 Sport goods	Other machinery and equipment specialized for the production of tourism characteristic products

Source: SNA, 2008, pp. 202-207, United Nations Statistical Division, 2014c and TSA:RMF, 2008, pp. 98-99

## Annex 4. Detailing the products (following CPC Ver. 2 classification) that make up the Tourism Collective Consumption

No	CPC code	Name of products	Explanatory notes
1.	85561	Tourism promotion services	This subclass includes: - promotion of tourism for countries, regions or communities
2.	85562	Visitor information services	This subclass includes: - provision of information to visitors or potential visitors regarding destinations, preparing brochures, etc.
3.	91135	Public administrative services related to the distributive and catering trades, hotels and restaurants	This subclass includes: - public administrative services related to the distributive trades, storage and warehousing and hotels and restaurants - administrative services provided by government offices, bureaux and programme units concerning: development and monitoring of regulations concerning wholesale and retail trade, consumer protection, price control and rationing schemes operating through retailers or wholesalers, storage and warehousing, hotel and restaurant operation - public administrative services concerning the design and construction of restaurants, hotels and other accommodation - support and information services for the above-mentioned affairs
4.	91136	Public administrative services related to tourism affairs	This subclass includes: - public administrative services related to tourism and tourism promotion - administrative services provided by government offices, bureaux and programme units concerning: advertising campaigns, dissemination of tourism information, other tourist support services This subclass does not include: - tourism promotion services, cf. 85561 - visitor information services, cf. 85562
	<b>Part of</b>		
5.	83700	Market research and public opinion polling services	This subclass includes: - market analysis, analysis of competition and the behaviour of consumers - use of research monographs, statistics, econometric models, surveys, etc. - investigation services designed to secure information on public opinions regarding social, economic, political and other issues This subclass does not include: - public relations services, cf. 83121
6.	91260	Police and fire protection services	This subclass includes: - administrative and operational services provided by regular and auxiliary police forces financed by public authorities, plus harbour police, border police, coast guards and other special police forces - police services related to traffic regulation, registration of aliens, operation of police laboratories and maintenance of police records - administrative and operational services related to

No	CPC code	Name of products	Explanatory notes
			<p>firefighting and fire prevention by regular and auxiliary fire brigades financed by public authorities</p> <ul style="list-style-type: none"> <li>- combating of floods and other natural disasters</li> <li>- beach surveillance and rescue operations on open water and in mountains</li> <li>- civil protection services provided by army or police forces</li> <li>- marine fireboat services</li> </ul> <p>This subclass does not include:</p> <ul style="list-style-type: none"> <li>- civil defence services, cf. 91250</li> </ul>
7.	92919	Other education and training services, n.e.c.	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- training for car, bus, lorry and motorcycle driving licences</li> <li>- training for flying certificates and ship licences</li> <li>- computer training services</li> <li>- management training services</li> <li>- services provided by music camps, science camps, computer camps and other instructional camps, except for sports</li> <li>- education services not definable by level</li> </ul> <p>This subclass does not include:</p> <ul style="list-style-type: none"> <li>- services related to literacy programmes for adults, cf. 92200, 92310</li> <li>- higher education services comparable to the regular education system, cf. 924, 925</li> <li>- cultural education services other than academic, cf. 92911</li> <li>- education services provided by instructors, coaches, etc., as part of sporting activities, cf. 92912</li> </ul>
8.	92920	Education support services	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- non-instructional services that support educational processes or systems, such as: <ul style="list-style-type: none"> <li>• educational consulting</li> <li>• educational guidance counselling services</li> <li>• educational testing evaluation services</li> <li>• educational testing services</li> <li>• organization of student exchange programmes</li> </ul> </li> </ul>
<b>Other personal proposals (part of)</b>			
9.	81119	Research and experimental development services in other natural sciences	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- research and experimental development services related to the environment</li> </ul>
10.	81212	Research and experimental development services in economics	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- research and experimental development services related to theories of economics, business management, finance, statistics, etc.</li> </ul> <p>This subclass does not include:</p> <ul style="list-style-type: none"> <li>- market research services, cf. 83700</li> </ul>
11.	81219	Research and experimental development services in other social sciences	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- research and experimental development services related to social and cultural anthropology, demography, geography (human, economic and social), linguistics, political sciences, sociology, etc.</li> </ul>
12.	81300	Interdisciplinary research and experimental development services	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- research and experimental development services combining methods and knowledge from both natural sciences/engineering and social sciences/humanities</li> </ul>



No	CPC code	Name of products	Explanatory notes
13.	91113	Overall economic and social planning and statistical services	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- administrative and operational services related to overall economic and social planning</li> <li>- services provided by planning and statistical offices undertaken at the different levels of government</li> <li>- services by other government offices, bureaux or programme units which formulate, co-ordinate and frequently monitor the implementation of overall economic and social plans and programmes</li> </ul>
14.	91124	Public administrative services related to recreation, culture and religion	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- public administrative services related to cultural facility support and individual artists and organizations engaged in promoting cultural activities</li> <li>- public administrative services related to national, regional or local festivities and the maintenance and running of religious institutions</li> </ul> <p>This subclass does not include:</p> <ul style="list-style-type: none"> <li>- sports events promotion and organization services, cf. 9651</li> <li>- sports facilities operation services, cf. 96520</li> <li>- other recreational services, cf. 969</li> </ul>
15.	91137	Public administrative services related to multipurpose development projects	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- administrative services provided by government offices, bureaux and programme units concerning the planning, design, construction, improvement and operation of multipurpose projects. Such projects typically consist of integrated facilities for power generation, flood control, irrigation, navigation and recreation.</li> <li>- support and information services for the above-mentioned affairs</li> </ul>
16.	91134	Public administrative services related to transport and communication	<p>This subclass includes:</p> <ul style="list-style-type: none"> <li>- public administrative services related to road and water transport, railway and air transport and communications</li> <li>- administrative services provided by government offices, bureaux and programme units concerning: <ul style="list-style-type: none"> <li>· planning, design, construction, maintenance and improvement of: <ul style="list-style-type: none"> <li>· roads, highways and associated structures</li> <li>· roadbeds and associated structures</li> <li>· water transport facilities; railways; airport runways, terminals, hangars, air navigation aids; other fixed structures and equipment associated with air transport</li> <li>· pipelines and other facilities</li> </ul> </li> </ul> </li> <li>- supervision and regulation of such work and development and administration of operational regulations for all the above-mentioned means of transport and related equipment</li> <li>- public administrative services related to communications, i.e. postal, telephone, telegraph, cable and wireless communications systems and</li> </ul>

No	CPC code	Name of products	Explanatory notes
			communications satellites - public administrative services related to planning, development, functioning and improvement of communications systems - public administrative services related to the development and administration of regulations for these systems - support and information services for the above-mentioned affairs This subclass does not include: - police traffic-control services on roads and waterways, cf. 91260

Source: extracted from United Nations Statistical Division, 2013

## Annex 5. What CPC products are included or excluded from the corresponding industries of the elements that make up Tourism Collective Consumption

No	Generic name	Corresponding industry (ISIC Rev. 4)	CPC products included	CPC products excluded
1.	Tourism promotion & Visitor information	7990 Other reservation service and related activities	85561 Tourism promotion services 85562 Visitor information services	85512 Reservation services for rail transportation 85513 Reservation services for bus transportation 85514 Reservation services for vehicle rental 85519 Other transportation arrangement and reservation services n.e.c. 85521 Reservation services for accommodation 85522 Timeshare exchange services 85539 Reservation services for event tickets, entertainment and recreational services and other reservation services 85550 Tourist guide services
2.	Public administrative services specific for tourism and tourism industries (excluding cultural and recreational activities)	8413 Regulation of and contribution to more efficient operation of businesses	91136 Public administrative services related to tourism affairs 91135 Public administrative services related to the distributive and catering trades, hotels and restaurants* 91134 Public administrative services related to transport and communications* 91137 Public administrative services related to multipurpose development projects*	91131 Public administrative services related to agriculture, forestry, fishing and hunting 91132 Public administrative services related to fuel and energy 91133 Public administrative services related to mining and mineral resources, manufacturing and construction 91138 Public administrative services related to general economic, commercial and labour affairs
<i>Part of</i>				
3.	Market research in tourism	7320 Market research and public opinion polling	83700 Market research and public opinion polling services	No CPC code left to be excluded but it should exclude all what is not related to tourism
4.	Public order and safety related to tourism	8423 Public order and safety activities	91260 Police and fire protection services	91270 Public administrative services related to law courts 91280 Administrative services related to the detention or rehabilitation of criminals 91290 Public administrative services related to other public order and safety affairs

No	Generic name	Corresponding industry (ISIC Rev. 4)	CPC products included	CPC products excluded
5.	Education related to tourism	8549 Other education n.e.c. 8550 Educational support services	92919 Other education and training services, n.e.c. 92920 Educational support services	No CPC code left to be excluded but it should exclude all what is not related to tourism
6.	Research and development related to tourism	7210 Research and experimental development on natural sciences and engineering	81119 Research and experimental development services in other natural sciences (e.g. related to environment) 81300 Interdisciplinary research and experimental development services	81111 Research and experimental development services in physical sciences 81112 Research and experimental development services in chemistry and biology 81121 Research and experimental development services in biotechnology 81129 Research and experimental development services in other engineering and technology 81130 Research and experimental development services in medical sciences and pharmacy 81140 Research and experimental development services in agricultural sciences 81400 Research and development originals
		7220 Research and experimental development on social sciences and humanities	81212 Research and experimental development services in economics 81219 Research and experimental development services in other social sciences 81300 Interdisciplinary research and experimental development services	81211 Research and experimental development services in psychology 81213 Research and experimental development services in law 81221 Research and experimental development services in languages and literature 81229 Research and experimental development services in other humanities 81211 Research and experimental development services in psychology 81400 Research and development originals
7.	Official statistics for tourism	8411 General public administration activities	91113 Overall economic and social planning and statistical services*	91111 Executive and legislative services 91112 Financial and fiscal services 91114 Government services (administrative services) to research and development 91119 Other overall government public services 91191 Administrative services related to government personnel

No	Generic name	Corresponding industry (ISIC Rev. 4)	CPC products included	CPC products excluded
				91199 Other administrative services of the government n.e.c.
8.	Public administrative services specific for culture and recreation	8412 Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	91124 Public administrative services related to recreation, culture and religion*	91121 Public administrative services related to education* 91122 Public administrative services related to health care 91123 Public administrative services related to housing and community amenities*

\* - part of

Source: own conception based on United Nations Statistics Division, 2014a



## Annex 6. Detailing the proposed COFOG classification used for Tourism Collective Consumption

No.	Category	COFOG		Explanatory notes for COFOG
		Code	Code	
1.	<b>Specific tourism affairs</b>	04.73	Tourism (CS)	<ul style="list-style-type: none"> <li>- administration of tourism affairs and services;</li> <li>- promotion and development of tourism; liaison with the transport, hotel and restaurant industries and other industries benefiting from the presence of tourists;</li> <li>- operation of tourist offices at home and abroad, etc.;</li> <li>- organization of advertising campaigns, including the production and dissemination of promotional literature and the like;</li> <li>- compilation and publication of statistics on tourism.</li> </ul>
<b>Part of COFOG classes</b>				
2.	<b>Economic affairs envisaging some tourism industries</b>	04.72	Hotels and restaurants (CS)	<ul style="list-style-type: none"> <li>- administration of affairs and services concerning construction, extension, improvement, operation and maintenance of hotels and restaurants;</li> <li>- supervision and regulation of hotel and restaurant operations (regulations governing prices, cleanliness and sales practices, hotel and restaurant licensing, etc.);</li> <li>- production and dissemination of general information, technical documentation and statistics on hotel and restaurant affairs and services;</li> <li>- grants, loans or subsidies to support the construction, operation, maintenance or upgrading of hotels and restaurants.</li> </ul>
		04.51	Road transport (CS)	<ul style="list-style-type: none"> <li>- administration of affairs and services concerning operation, use, construction and maintenance of road transport systems and facilities (roads, bridges, tunnels, parking facilities, bus terminals, etc.);</li> <li>- supervision and regulation of road users (vehicle and driver licensing, vehicle safety inspection, size and load specifications for passenger and freight road transport, regulation of hours of work of bus, coach and lorry drivers, etc.), of road transport system operations (granting of franchises, approval of freight tariffs and passenger fares and of hours and frequency of service, etc.) and of road construction and maintenance;</li> <li>- construction or operation of non-enterprise-type road transport systems and facilities;</li> <li>- production and dissemination of general information, technical documentation and statistics on road transport system operations and on road construction activities;</li> <li>- grants, loans or subsidies to support the operation, construction, maintenance or upgrading of road transport systems and facilities.</li> </ul> <p>Includes: highways, urban roads, streets, bicycle paths and footpaths.</p> <p>Excludes: road traffic control (03.1.0); grants, loans and subsidies to road vehicle manufacturers (04.4.2); street cleaning (05.1.0); construction of noise embankments, hedges and other anti-noise facilities including the resurfacing of sections of urban highways with noise reducing surfaces (05.3.0); street lighting (06.4.0).</p>
		04.52	Water transport (CS)	<ul style="list-style-type: none"> <li>- administration of affairs and services concerning operation, use, construction and maintenance of inland,</li> </ul>

No.	Category	COFOG		Explanatory notes for COFOG
		Code	Code	
				<p>coastal and ocean water transport systems and facilities (harbours, docks, navigation aids and equipment, canals, bridges, tunnels, channels, breakwaters, piers, wharves, terminals, etc.);</p> <ul style="list-style-type: none"> <li>- supervision and regulation of water transport users (registration, licensing and inspection of vessels and crews, regulations concerning passenger safety and freight security, etc.), of water transport system operations (granting of franchises, approval of freight tariffs and passenger fares and of hours and frequency of service, etc.) and of water transport facility construction and maintenance;</li> <li>- construction or operation of non-enterprise-type water transport systems and facilities (such as ferries);</li> <li>- production and dissemination of general information, technical documentation and statistics on water transport system operations and on water transport facility construction activities;</li> <li>- grants, loans or subsidies to support the operation, construction, maintenance or upgrading of water transport systems and facilities.</li> </ul> <p>Includes: radio and satellite navigation aids; emergency rescue and towing services.</p> <p>Excludes: grants, loans and subsidies to shipbuilders (04.4.2)</p>
		04.53	Railway transport (CS)	<ul style="list-style-type: none"> <li>- administration of affairs and services concerning operation, use, construction or maintenance of railway transport systems and facilities (railway roadbeds, terminals, tunnels, bridges, embankments, cuttings, etc.);</li> <li>- supervision and regulation of railway users (rolling stock condition, roadbed stability, passenger safety, security of freight, etc.), of railway transport system operations (granting of franchises, approval of freight tariffs and passenger fares and of hours and frequency of service, etc.) and of railway construction and maintenance;</li> <li>- construction or operation of non-enterprise-type railway transport systems and facilities;</li> <li>- production and dissemination of general information, technical documentation and statistics on railway transport system operations and on railway construction activities;</li> <li>- grants, loans or subsidies to support the operation, construction, maintenance or upgrading of railway transport systems and facilities.</li> </ul> <p>Includes: long-line and interurban railway transport systems, urban rapid transit railway transport systems and street railway transport systems; acquisition and maintenance of rolling stock.</p> <p>Excludes: grants, loans and subsidies to rolling stock manufacturers (04.42); construction of noise embankments, hedges and other anti-noise facilities including the resurfacing of sections of railways with noise reducing surfaces (05.30).</p>
		04.54	Air transportation (CS)	<ul style="list-style-type: none"> <li>- administration of affairs and services concerning operation, use, construction and maintenance of air transport systems and facilities (airports, runways, terminals, hangars, navigation aids and equipment, air</li> </ul>



No.	Category	COFOG		Explanatory notes for COFOG
		Code	Code	
				<p>control amenities, etc.);</p> <ul style="list-style-type: none"> <li>- supervision and regulation of air transport users (registration, licensing and inspection of aircraft, pilots, crews, ground crews, regulations concerning passenger safety, investigation of air transport accidents, etc.), of air transport system operations (allocation of routes, approval of freight tariffs and passenger fares and of frequency and levels of service, etc.) and of air transport facility construction and maintenance;</li> <li>- construction or operation of non-enterprise-type public air transport services and facilities;</li> <li>- production and dissemination of general information, technical documentation and statistics on air transport system operations and on air transport facility construction;</li> <li>- grants, loans or subsidies to support the operation, construction, maintenance or upgrading of air transport systems and facilities.</li> </ul> <p>Includes: radio and satellite navigation aids; emergency rescue services; scheduled and non-scheduled freight and passenger services; regulation and control of flying by private individuals.</p> <p>Excludes: grants, loans and subsidies to aircraft manufacturers (04.4.2).</p>
		08.60	Recreation, culture and religion n.e.c. (CS)	<ul style="list-style-type: none"> <li>- administration, operation or support of activities such as formulation, administration, coordination and monitoring of overall policies, plans, programmes and budgets for the promotion of sport, recreation, culture and religion; preparation and enforcement of legislation and standards for the provision of recreational and cultural services; production and dissemination of general information, technical documentation and statistics on recreation, cultural and religion.</li> </ul> <p>Includes: affairs and services relating to recreation, culture and religion that cannot be assigned to (08.1), (08.2), (08.3), (08.4) or (08.5).</p>
		04.74	Multi-purpose development projects (CS) ( <i>it includes recreation</i> )	<p>Multi-purpose development projects typically consist of integrated facilities for generation of power, flood control, irrigation, navigation and recreation.</p> <ul style="list-style-type: none"> <li>- administration of affairs and services concerning construction, extension, improvement, operation and maintenance of multi-purpose projects;</li> <li>- production and dissemination of general information, technical documentation and statistics on multi-purpose development project affairs and services;</li> <li>- grants, loans or subsidies to support the construction, operation, maintenance or upgrading of multi-purpose development projects;</li> </ul> <p>Excludes: projects with one main function and other functions that are secondary (classified according to main function).</p>
3.	<b>Public order and safety</b> related to tourism	03.10	Police services (CS)	<ul style="list-style-type: none"> <li>- administration of police affairs and services, including alien registration, issuing work and travel documents to immigrants, maintenance of arrest records and statistics related to police work, road traffic regulation and control, prevention of smuggling and control of offshore and ocean fishing;</li> <li>- operation of regular and auxiliary police forces, of port,</li> </ul>

No.	Category	COFOG		Explanatory notes for COFOG
		Code	Code	
				border and coast guards, and of other special police forces maintained by public authorities; operation of police laboratories; operation or support of police training programmes. Includes: traffic wardens. Excludes: police colleges offering general education in addition to police training (09.1), (09.2), (09.3) or (09.4).
4.	<b>Research and development</b> in tourism ( <i>the results of the research have to be freely available</i> )	04.87	R&D Other industries (CS)	- administration and operation of government agencies engaged in applied research and experimental development related to other sectors; - grants, loans or subsidies to support applied research and experimental development related to other sectors undertaken by non-government bodies such as research institutes and universities. Includes: distributive trades, storage and warehousing; hotels and restaurants; tourism and multi-purpose development projects. Excludes: basic research (01.4.0).
5.	<b>Statistics in tourism</b> produced by “official statistical office”	01.32	Overall planning and statistical services (CS)	- administration and operation of overall economic and social planning services and of overall statistical services, including formulation, coordination and monitoring of overall economic and social plans and programmes and of overall statistical plans and programmes. Excludes: economic and social planning services and statistical services connected with a specific function (classified according to function).

Source: own classification and explanatory notes upon United Nations Statistical Division (2014b)

## Annex 7. Centralized list of countries that produced/ have produced estimates for TGFCF and/or TCC

No.	Country	Evidence from	TGFCF	TCC	Disseminate data in a tabular form? (English or Spanish) (Yes or No)	Reference year for the data (most recent)
<b>Europe</b>						
1.	Spain	Instituto Nacional de Estadística, 2014; Eurostat, 2013	x	x	Yes	2007
2.	Portugal	Statistics Portugal, 2014; Eurostat, 2013	x		Yes	2007
3.	Norway	Statistics Norway, 2014; Eurostat, 2013	x		Yes	2007
4.	Czech Republic	Czech Statistical Office, 2014; Eurostat, 2013	x		Yes	2010
5.	Estonia	Eurostat, 2013	x		No	2008
6.	Slovenia	Eurostat, 2011		x	No	2003
7.	Ireland	Eurostat, 2011		x	No	2000
8.	Denmark	Eurostat, 2011		x	No	2008
9.	Sweden	Eurostat, 2013		x	No	2006
10.	Poland	Eurostat, 2011	x	x	No	2006
11.	Hungary	Eurostat, 2011	x		No	2005
12.	Slovakia	Eurostat, 2013	x		No	2010
13.	France*	UNWTO, 2010; Meis, 2005	x		No	N/A
14.	Netherlands*	UNWTO, 2010; van de Steeg, 2006	x	x	No	2002
<b>Asia</b>						
15.	Indonesia	UNWTO, 2010; Meis, 2005; Statistics Indonesia et al., 2012	x	x	Yes	2010
16.	Philippine	UNWTO, 2010; Meis, 2005; Virola et al. 2012	x	x	Yes	1998
17.	Saudi Arabia	Saudi Commission for Tourism and Antiquities, 2014	x		Yes	2011
18.	India	National Council of Applied Economic Research, 2012	x	x	Yes	2009-2010
19.	Thailand	Meis, 2005	x	x	No	N/A
20.	Kazakhstan	UNWTO, 2010	x	x	No	N/A
<b>America</b>						
21.	Canada	Statistics Canada, 2012	x		No	2007
22.	Mexico	Instituto Nacional de Estadística y Geografía, 2010	x	x	Yes	2008
23.	Peru	UNWTO, 2010; Meis, 2005; Ministerio de Comercio Exterior y Turismo, Oficina General de Estudios Económicos, 2011		x	Yes	2007
<b>Africa</b>						
24.	Morocco	UNWTO, 2010; Meis, 2005	x	x	No	N/A
<b>TOTAL</b>			<b>19</b>	<b>15</b>	<b>10</b>	

Note: Countries marked with “x” mean that they produced estimates for TGFCF and/or TCC

\* - not included in the analysis in subchapter 3.1. (see footnote 7)

N/A – data not available



## Annex 8. Grouping of assets from Enterprise Accounts Register and their relevance for tourism as part of Tourism-specific fixed assets classification

No.	Name	Relevance for tourism
1.	<b>Motor vehicles for industrial use</b>	
	Jeeps for less than nine persons	Yes*
	Other motor vehicles for less than nine persons, excluding taxis	Yes*
2.	<b>Ships, aircraft and pertaining equipment</b>	
	Aircrafts	Yes*
	Boats less than 12 GRT	Yes*
	Other ships and boats (6 sub-groups)	Yes*
3.	<b>Manufacturing machinery and equipment</b>	
	Fish processing machinery	No
	Other food processing machinery	Possible
	Other machinery (13 subgroups)	Possible
4.	<b>Office machinery and computers</b>	
	Furnishings, fitment	Possible
	Telephone systems	Possible
	Computers	Possible
	Software	Possible
	Other office machinery (6 sub-groups)	Possible
5.	<b>Machinery and equipment other, such as vans, coaches, taxis, bulldozers etc.</b>	Yes*
6.	<b>Constructions</b>	
	Office buildings	Possible
	Storefront	Possible
	Dwelling house	Yes
	Other construction (17 sub-groups)	Possible
7.	<b>Non-renewable subsoil assets such as non-metallic mineral reserves, sand pits etc.</b>	
	Gravel and sand pits	No
	Other non-renewable subsoil assets	No
8.	<b>Intangible non-produced assets, such as purchased goodwill, patented entities etc.</b>	
	Goodwill	Possible**
	Patented and trade marks	Possible**
	Copyright	Possible**
	Other purchased right	Possible**
9.	<b>Assets, not depreciated, according to tax laws, such as land, fishing quotas, valuables etc.</b>	
	Land and building sites	Possible**
	Fishing quotas (13 sub-groups by fish species)	No
	Valuables	No
	Other assets not depreciated	Possible
10.	<b>Other assets, not depreciated such as production rights in agriculture, start-up costs etc.</b>	Possible

\* - only passenger transportation should be considered

\*\* - separately within a memorandum item according with TSA:RMF, 2008

Source: based on Statistics Iceland, 2011, p. 219



## Annex 9. Figures on government collective consumption in Iceland and other calculations

**Table 1: Government collective consumption in Iceland by level of government, 1998-2013.**

Source: compiled from Statistics Iceland, 2014a; b; c

ISK mil.

Years	Central government	Local government	General government
1998	30,858.1	15,738.2	47,270.6
1999	34,667.0	16,876.5	52,302.7
2000	39,031.5	18,523.2	58,362.5
2001	41,995.3	19,919.6	62,799.9
2002	46,364.5	20,948.6	68,203.5
2003	48,142.7	20,335.5	69,470.5
2004	51,846.1	21,696.5	74,548.1
2005	56,550.8	24,448.8	82,056.5
2006	63,952.2	27,561.9	92,611.7
2007	70,657.6	30,464.9	102,457.4
2008	82,078.4	36,365.7	119,636.0
2009	93,394.3	38,588.1	133,678.4
2010	96,820.4	40,347.9	138,871.0
2011	103,610.5	41,234.5	146,600.2
2012	108,521.7	45,040.1	155,376.1
2013	110,077.3	47,758.7	159,699.2

Notes: The compilation of collective consumption was made by summing up the COFOG categories that are included in collective consumption according to SNA, 2008, para. 9.100.

In addition, the consumption of fixed capital was also included.

It should be noted that figures on general government does not equal the sum of central government and local governments as globally the general government includes also the “social security sector”.

**Table 2: Tourism in Iceland as a government final consumption by levels of government, 1998-2013.**

Source: Statistics Iceland, 2014a; b; c

ISK mil.

Years	Central government (I)	Local government (II)	General government (III) = (I) + (II)
1998	124.8	91.1	215.9
1999	179.0	101.0	280.0
2000	266.8	106.8	373.6
2001	333.3	105.9	439.2
2002	370.3	124.3	494.6
2003	384.1	171.1	555.2
2004	350.2	209.1	559.3
2005	351.5	197.5	549.0
2006	285.4	246.8	532.2
2007	445.1	251.4	696.5
2008	467.8	327.3	795.1
2009	473.4	257.5	730.9
2010	350.5	337.4	687.9
2011	325.5	442.1	767.6
2012	357.8	473.3	831.1
2013	494.7	510.5	1,005.2

Note: Tourism only defined as COFOG 04.73

**Table 3: Calculating some tourism industry shares from the number of registered enterprises and organizations in Iceland, 2009 – 2013.**

Source: Statistics Iceland, 2014h

	ÍSAT 2008	2009	2010	2011	2012	2013
Road passenger transportation ( <i>tourism industry</i> )	49.32, 49.39	142	141	145	152	165
Road freight transportation + Road passenger transport ( <i>non-tourism industry</i> )	49.31.0, 49.41.1, 49.41.2, 49.41.9, 49.42.0	521	507	494	485	479
<b>Road passenger transportation industry share</b> in total road transportation industry	-	<b>21.4%</b>	<b>21.8%</b>	<b>22.7%</b>	<b>23.9%</b>	<b>25.6%</b>
Air passenger transportation ( <i>tourism industry</i> )	51.10.1, 51.10.2	37	40	45	50	47
Air freight transportation	51.21	5	5	4	4	4
<b>Air passenger transportation industry share</b> in total air transportation industry	-	<b>88.1%</b>	<b>88.9%</b>	<b>91.8%</b>	<b>92.6%</b>	<b>92.2%</b>
Water passenger transportation ( <i>tourism industry</i> )	50.10.0, 50.30.0	21	24	27	30	32
Water freight transportation	50.20.0	20	20	20	20	19
<b>Water passenger transportation industry share</b> in total water transportation industry	-	<b>51.2%</b>	<b>54.5%</b>	<b>57.4%</b>	<b>60.0%</b>	<b>62.7%</b>
Recreation and culture ( <i>tourism industries</i> )	90.01.0, 90.02.0, 90.03.0, 90.04.0, 91.02.0, 91.03.0, 91.04.0, 92.00.0, 93.11.0, 93.13.0, 93.19.0, 93.21.0, 93.29.0	1563	1609	1642	1672	1706
Recreation and culture ( <i>non-tourism industries</i> ) + Activities of religious organisations	91.01.0, 93.12.0, 94.91.0	1795	1834	1855	1888	1907
<b>Recreation &amp; Culture share</b> in total Recreation, culture and religion	-	<b>46.5%</b>	<b>46.7%</b>	<b>47.0%</b>	<b>47.0%</b>	<b>47.2%</b>



## Annex 10. A model for calculating an “Icelandic overnights” ratio

The basic assumption is that the provision of collective services for tourists is closely related to a tourist presence in a destination. One can consider that **at local level** tourists are in fact benefiting directly from these collective services along with the residents.

A ratio can be proposed to be calculated and the basic philosophy is that **time** is the **basic variable** that can make the difference between residents benefiting these services and tourists since tourists are spending a limited time at the destination visited (in this case Iceland). In a quantitative way and in a determined period of time (i.e. year) number of overnights gives this indication of time spent at the destination and thus overnights can be used as a variable.

Number of overnight stays spend by tourists (both foreign and domestic) in Iceland is known for collective accommodation establishments. Number of overnights stays spent by Icelanders in Iceland (not as tourists but as residents) can be simply estimated from population statistics with some adjustments (mostly coming from overnights spent abroad by Icelandic residents). Adjustments are also necessary to consider the other forms of accommodation not included in official figures (staying a friends and relatives, private holiday homes or holiday homes owned by travel unions).

The following example details the calculation of this ratio for the year 2012 (see table 1). This ratio was generically called “Icelandic overnights ratio”.

**Table 1:** A model for calculating a tourism ratio called “Icelandic overnights ratio” for 2012.

Indicators	Value
Total population at January the 1st (A)	319,575
Icelanders	298,618
Foreigners	20,957
Number of emigrants	6,276
Icelanders (B)	4,066
Foreigners	2,210
Number of departures of Icelanders abroad – Icelandic Tourist Board (C)	373,940
Adjusted number of departures (without Icelandic citizens emigrants) (D) = (C) – (B)	369,874
Icelanders’ average length of stay for trips abroad (from Statistics Iceland, 2007 - 2008 Travel demand survey) (E)	9
Total overnights of Icelanders abroad (F) = (D) x (E)	3,328,866
Maximum theoretical number of overnights of resident population in the country (G) = (A) x 366	116,964,450
<b>Adjusted maximum theoretical number of overnights of resident population in the country (H) = (G) – (F)</b>	<b>113,635,584</b>
Number of overnights in Iceland in accommodation establishments (I), out of which	3,725,213
Foreigners (J)	2,879,111
Icelanders (K)	846,102
Adjusted number of foreign tourists’ overnights (L) = (J) x 100/92.9 ( <u>Assumption</u> : 7.1% of overnights are allocated to those staying with friends and relatives; this figure is according with ITB’s commissioned survey for inbound visitors in summer 2011)	3,099,151
Adjusted number of Icelanders overnights ( <u>Assumption</u> : 34.1% is the share of overnights in accommodation establishments in total overnights spent by Icelanders in Iceland since we have to consider also the share of those staying with friends and relatives, in their own summer houses or in a Union’s summerhouse; this figure is according to Statistics Iceland,	2,481,238

Indicators	Value
2007 - 2008 Travel demand survey) (M) = (K) x 100/34.1	
<b>Number of total overnights of tourists (both foreigners and Icelanders) in Iceland</b> (N) = (L) + (M)	<b>5,580,388</b>
<b>CALCULATING INCELANDERS OVERNIGHTS RATIO (O) = (N)/(H – M)<sup>26</sup></b>	<b>5.0%</b>

The above approach included three categories of assumptions taken from the former survey or Statistics Iceland carried out in 2007-2008 and the ITB's commissioned survey on inbound visitors (for summer 2011). These can be considered the major limitations of the approach since there are no complete data for reference year.

At the same time, it included real figures regarding number of residents in Iceland, number of departures of Icelanders abroad and number of overnights in accommodation establishments in Iceland (for both foreigners and Icelanders). Obviously, adjustments are necessary to estimate also the "part" what is not covered by the official statistics (i.e. accommodation provided by friends and relatives, staying in owned summer houses or summer houses owned by Unions). However, for simplicity, it was convened that foreign tourists did not have overnight stays in Union's summer houses and owned summer houses.

By using these adjusted figures on overnight stays the "Icelandic overnights ratio" was calculated as total overnights of tourists (both foreigners and Icelanders) divided to the maximum theoretical of overnights (in one year) spent by residents in Iceland less overnights of Icelandic tourists within Iceland.

This "Icelandic overnight ratio" was applied to COFOG category 04.51 Road transport, only for local level. It should be reminded that at local level this category includes the maintenance of streets, bicycle paths, walkways, facilities that are used theoretically by both residents and tourists.

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<sup>26</sup> In order to avoid double-counting, total Icelanders' overnights made in Iceland were subtracted from the maximum theoretical number of overnights of resident population in Iceland. This proves that domestic tourism is also important to be considered and was included in the calculation of this ratio.

## Annex 11. Statistics on grants provided by Rannís, 2009 - 2013

**Table 1:** Grants from the Technology Development Fund related to tourism, 2009-2013.

ISK mil.

No	Name of the project	About	Company	Period	Breakdown of funds per year				
					2009	2010	2011	2012	2013
1.	Corporate Travel Research	Flight search engine	Dohop ehf	2010-2011		5.3	7.5		
2.	Dohop – Marketing in Scandinavia	Expanding on the new markets	Dohop ehf	2012				5	
3.	Marketing of traveleast.is	Website development	Austurför ehf	2013					8
4.	Travel Surveys with Electronic driver logs	Software in travel survey	SagaTraffic ehf	2011-2012			9	9	
5.	Building Infrastructure to Prepare For International Marketing Communication	Software for summerhouse owners	Búngaló ehf	2013					8
6.	Health Hotel Stykkishólmur	A business plan to open a health hotel	Arkís ehf	2009-2010	10	10			
7.	Adventure - Hotel in Hallormsstaður	Developing and adventure-hotel	Hálogaland	2010-2012		2.2	7.7	5.5	
8.	Food and sustainable tourism	Cluster tourism - food industry	Matis ohf.	2010-2012		15	15	15	
9.	Target marketing purposes	Ticketing airlines	Calidris ehf.	2009	3				
10.	Virtual guided tours for tourists	Virtual guide for tourists	Locatify ehf.	2009	5				
Total amounts related to tourism					18	32.5	39.2	34.5	16
Total amounts allocated from Technology Fund					825	765	723	682	1061
<b>Share of tourism in total</b>					<b>2,2%</b>	<b>4,2%</b>	<b>5,4%</b>	<b>5,1%</b>	<b>1,5%</b>

Source: compiled upon Rannís, 2014b; c

More info about the projects:

1.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=101216010">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=101216010</a>
2.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1209850611">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1209850611</a>
3.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1321740611">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1321740611</a>
4.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1103730611">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1103730611</a>
5.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1321290611">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=1321290611</a>
6.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0903100651">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0903100651</a>
7.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=101297010">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=101297010</a>
8.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0903100643">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0903100643</a>
9.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0903030139">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0903030139</a>
10.	<a href="http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0909151754">http://rannis.rhi.hi.is/AllocatedFunds/meirasida.php?a=tthsj&amp;b=0909151754</a>

**Table 2:** Number of funded projects (grants) by Technology Development fund, 2009 – 2013.

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Number of tourism related grants	3	4	4	4	2
Total number of funded grants	81	57	36	54	63
<b>Share of tourism related grants</b>	<b>3.7%</b>	<b>7.0%</b>	<b>11.1%</b>	<b>7.4%</b>	<b>3.2%</b>

Source: compiled upon Rannís, 2014c, p. 8

## Annex 12. Experimental table for Tourism Gross Fixed Capital Formation in Iceland, 2012 (details by tourism industries)

ISK mil.

	Accommodation for visitors (8.1)	Food and beverage- serving industry (8.2)	Road passenger transportation (8.3)	Water passenger transport (8.4)	Air passenger transportation (8.5)
<b>I. Fixed assets related to tourism (1 + ... +4)</b>	<b>1,350.5</b>	<b>228.2</b>	<b>1,545.9</b>	<b>32.3</b>	<b>1,096.4</b>
1. Dwellings – vacation homes (summer houses)	1.2	8.0	0.0	0.0	0.0
2. Hotels and restaurants	1,174.8	77.9	33.2	0.0	0.0
3. Other buildings and structures for tourism industries*	89.5	23.6	-67.6	0.0	35.4
4. Passenger transport related to tourism	84.9	118.8	1,580.3	32.3	1,061.1
4.1. Motor vehicles for passenger transportation**	48.5	60.1	1,563.8	11.2	-2.0
4.2. Aircrafts	0.0	0.0	0.0	0.0	1,063.1
4.3. Boats and ships	36.4	58.7	16.4	21.1	0.0
<b>II. Other assets part of Gross Fixed Capital Formation of Tourism Industries</b>	<b>716.9</b>	<b>522.5</b>	<b>234.5</b>	<b>54.4</b>	<b>158.6</b>
<b>III. Total Gross Fixed Capital Formation (I + II)</b>	<b>2,067.4</b>	<b>750.7</b>	<b>1,780.4</b>	<b>86.7</b>	<b>1,255.0</b>
<b>IV. Memorandum item Investment of tourism industries in non-produced non-financial assets</b>	<b>39.4</b>	<b>32.3</b>	<b>- 0.3</b>	<b>0.0</b>	<b>0.0</b>
Tangible assets (Land and building sites)	12.8	0.0	- 0.3	0.0	0.0
Intangible assets (Goodwill, Patents and trademarks, Copyright, Publishing rights, Other publishing entitlements)	26.6	32.3	0.0	0.0	0.0

Note: totals might not match entirely due to rounding

	<b>Transport equipment rental</b>	<b>Travel agencies and other reservation services</b>	<b>Cultural industry</b>	<b>Sport and recreational activity</b>	<b>Retail trade of gasoline</b>
	<b>(8.6)</b>	<b>(8.7)</b>	<b>(8.8)</b>	<b>(8.9)</b>	<b>(8.10)</b>
<b>I. Fixed assets related to tourism (1 + ... +4)</b>	<b>710.9</b>	<b>1,903.9</b>	<b>7.8</b>	<b>528.2</b>	<b>0.0</b>
1. Dwellings – vacation homes (summer houses)	0.0	-35.5	0.0	0.0	0.0
2. Hotels and restaurants	0.0	291.4	0.0	1.6	0.0
3. Other buildings and structures for tourism industries*	18.7	446.1	-12.4	424.2	0.0
4. Passenger transport related to tourism	692.2	1,201.9	20.2	102.4	0.0
4.1. Motor vehicles for passenger transportation**	692.2	1,166.4	20.2	83.1	0.0
4.2. Aircrafts	0.0	0.0	0.0	0.0	0.0
4.3. Boats and ships	0.0	35.5	0.0	19.3	0.0
<b>II. Other assets part of Gross Fixed Capital Formation of Tourism Industries</b>	<b>-68.1</b>	<b>651.5</b>	<b>181.8</b>	<b>944.5</b>	<b>17.8</b>
<b>III. Total Gross Fixed Capital Formation (I + II)</b>	<b>642.8</b>	<b>2,555.5</b>	<b>189.6</b>	<b>1,472.7</b>	<b>17.8</b>
<b>IV. Memorandum item Investment of tourism industries in non-produced non- financial assets</b>	<b>- 2.9</b>	<b>135.8</b>	<b>6.3</b>	<b>30.1</b>	<b>0.0</b>
Tangible assets (Land and building sites)	- 2.9	7.8	0.0	28.1	0.0
Intangible assets (Goodwill, Patents and trademarks, Copyright, Publishing rights, Other publishing entitlements)	0.0	128	6.3	2.0	0.0

Note: totals might not match entirely due to rounding





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