World Tourism Organization

UNWTO

UNWTO

Regional Tourism Satellite Account

REGIONAL TOURISM SATELLITE ACCOUNT

Author: Agustín Cañada[1]
October 2013

Abstract

Different approaches have been taken in recent decades to a Tourism Satellite Account (TSA) for regions or subnational entities, and the concepts, methods and results in each case have been distinctly heterogeneous, particularly given the lack of a common conceptual framework – like that set out in the Tourism Satellite Account: Recommended Methodological Framework (TSA:RMF) but applicable to the subnational level. The aim of this paper is to propose a rough outline for a regional TSA as a point of departure for the development of comprehensive systems for measuring the economic dimension of tourism at the subnational level, so as to yield homogeneous, and thus internationally comparable, findings. In addition to the conceptual and accounting issues to be addressed in developing regional TSAs, as a function of the availability and characteristics of regional accounts, this paper gives special attention to practical questions of quantification, including the use of interregional tourism consumption matrices, the statistical sources required and the institutional aspects at play in developing such an approach. It also discusses specific issues related to the measurement of particular products and activities, such as the "vacation home".

Keywords: Tourism Satellite Account, regional accounts, regional economy, UNWTO, SNA (System of National Accounts), ESA (European System of National and Regional Accounts)

---

[1] Quality Manager, National Statistical Institute, Spain and Associate Professor, Autonomous University of Madrid, Spain.

Table of contents

List of abbreviations and acronyms

COICOP	Classification of Individual Consumption by Purpose
ESA	European System of National and Regional Accounts
Eurostat	Statistical Office of the European Communities
GDP	Gross Domestic Product
GG	General Government
GVA	Gross Value Added
IRTS	International Recommendations for Tourism Statistics, 2008
NPISH	Non-profit institutions serving households
SUT	Supply and use tables
RTSA	Regional Tourism Satellite Account
SNA	System of National Accounts
TGDP	Tourism Gross Domestic Product
TSA	Tourism Satellite Account
TSA:RMF 2008	*Tourism Satellite Account: Recommended Methodological Framework, 2008*
UNWTO	World Tourism Organization

1. Introduction

1.1. The Tourism Satellite Account (TSA) is today considered the best procedure for measuring tourism from the economic point of view and for defining and analyzing the tourism industry in a given country. This general consensus about the TSA as a measurement procedure is the fruit of efforts by different institutions, and especially UNWTO, that culminated in 2008 with the publication of the methodological reference work TSA:RMF 2008. Among the undeniable contributions of those who have promoted TSA:RMF has been the acceptance of this procedure as the international standard.

1.2. Despite the success in applying the TSA, these statistical/accounting instruments need to be continually updated, to adapt to the changing economic reality of what one is attempting to measure and to respond to new user demands. There have for years been calls for an extension or adaptation of the TSA for regional use (see UNWTO, 2008), to meet increasing demand throughout the world for such support at the subnational level.

1.3. There have in fact been various initiatives in recent decades for the development of a regional or subnational TSA. Two distinct conceptual and methodological approaches have emerged: what we can call "regionalization" versus "regional estimation". The first attempts to apportion territorially certain parts or variables of an available national TSA, using different indicators and methods; the second calculates a TSA for an area or specific region, just as one would calculate a national-level TSA.

1.4. The first approach, regionalization, was used by one of the pioneering TSA countries, Canada, to conduct the first subnational estimates, publishing its first set of regional ("provincial") accounts in 1998 (Barber-Dueck et al., 2003). Projects for multiregional estimates have been conducted in such countries as Australia (Van Ho et al. 2008), and the northern European countries of Denmark, Finland and Norway (Zhang 2005, Konttinen 2006, Braendvang et al. 2001), which have developed regional systems derived from the national TSA, or national accounts and the input-output system, consisting essentially of supply and use tables (SUT).

1.5. Initiatives have been taken in the various regions of Spain as well as other countries (Wales in the United Kingdom) (Jones et al. 2010) based on what are purported to be *methods for regional estimation per se*. Such TSA's are developed as stand-alone products using the SUT and other statistical and accounting information for the specific region concerned, reproducing on a regional scale the basic TSA:RMF scheme, with the necessary adjustments and provisos required for conceptual and statistical reasons.

1.6. The most recent developments, both taking this latter regional perspective, have been the recently published 2011 TSA for Flanders-Brussels (Weekers, 2012), and in Spain, the TSA presented in 2010 for the Madrid region (Instituto de Estadística-C. Madrid (2011)).

1.7. However, the lack of a common conceptual and statistical framework has resulted in a wide heterogeneity of approaches, methods and results, making it difficult to compare the different products, with each other or with the national framework of a TSA. An additional consequence has been a surge in "competing" alternatives to the TSA, based on modelling procedures. All of this definitely affects the verisimilitude of tourism measurements, and by extension that of the TSA itself.

1.8. To avoid such problems, international institutions, and UNWTO in particular, have been working for a number of years to define a regional approach, for instance at the UNWTO regional conference on TSAs, held in Malaga, in 2008 (UNWTO, 2008).

1.9.   Particularly relevant in this regard has been the creation in 2009 of the International Network on Regional Economics, Mobility and Tourism (INRouTe), on the initiative of the World Tourism Organization (UNWTO) and other international and Spanish entities. The network aspires "to become an international reference for reflection and exchanges of knowledge on the measurement and economic analysis of tourism at the regional level". The current program of INRouTe includes five main areas of research and analysis[2] including the study at regional level of the "economic contribution of tourism", with emphasis on the development of "regional tourism satellite accounts" (INRouTe and UNWTO, 2012).

1.10.   This paper is in line with the approach taken by INRouTe. It seeks to define in a systematic way what a regional TSA should consist of, specifying the fundamental elements it should contain. Primarily theoretical and conceptual in nature, it is also intended to be realistic and not to advance excessively ambitious models or approaches. Efforts to define tourism and its economic dimensions must contend with a number of practical limitations, significant for national TSAs and even more so for regional ones. Chief among them is the availability of statistics, generally poorer at regional than at national level.

1.11.   A further clarification is needed on the scope of this paper: an extensive use of National and Regional Accounts is being done, including the statistical part of the Input-output tables. However, impact models, such as I-O models and others, are not considered in the document. For a detailed and updated description of these issues see Frechtling (2013).

1.12.   This paper is divided into the following chapters. Chapter 1 describes the basic format proposed for regional TSA's; its content and objectives are methodological in character. Chapter 2 covers the statistical procedures and sources appropriate for the estimation of certain key elements of the RTSA, with emphasis on elements that are simultaneously conceptual and practical, such as the interregional tourism consumption matrices. Chapter 3 covers other aspects that affect the development of an account (resources, institutional aspects, implementation strategy). Chapter 4 provides a summing up and some final reflections.

1.13.   A series of annexes provides additional material to complement and illustrate information contained in the main body of the paper.

2.   Adapting the TSA to the regional context (I): Conceptual aspects

2.1.   Regional accounts as frame of reference and conditioning factor for the regional TSA: a realistic vision

2.1.   As observed in various documents (including TSA:RMF 2008, Annex 7) and in papers on the subject by specialists (Frechtling, 2008), it is impossible to perfectly replicate the structure of a national TSA at the regional level. Why? There are three reasons: fundamental, conceptual and statistical:

i.   The first is that "a conceptual framework at the regional level equivalent to that of the System of National Accounts does not exist" (TSA:RMF 2008, Annex 7, pp. 106). Irrespective of the sector covered, tourism, there are various challenges in attempting to build a complete system of accounts for a region, because some concepts at national level can be readily used at regional level.

---

[2] The five areas are as follows: A. tourism as an economic sector; B. tourism and environment, non-economic contributions; C. economic contribution and impact (including tourism satellite accounts); D. tourism development and territorial cohesion; E. supporting tourism destination key stakeholders.

ii.   The second reason is that the definitions used at the national level for certain tourism elements and concepts (according to TSA:RMF) have to be adapted or redefined at subnational level. For instance, the delimitation between domestic and outbound tourism (given the relevance of border crossings flows) are challenging issues from a regional perspective at the regional level.

iii.   And the third reason, although from a practical standpoint it could almost come first, is statistical: the relatively detailed system of interrelated accounts that make up a TSA is extremely demanding of information; a body of detailed statistics is needed to complete all of the elements that define a TSA. And in many countries, such information is available at national but not regional levels.

2.2.   Nonetheless, and setting aside the statistical problems, which can often represent the real conditioning factor, it is important not to underestimate the conceptual challenges, and especially the issue of regional accounts (some of the definitions and criteria applied to national accounts are provided in Annex 2 to this paper).

2.3.   In the internationally recognized methodology for national accounts, the System of National Accounts, 2008 (SNA 2008) (European Commission et al., 2009), references to regional accounts are extremely marginal, and confined to a general chapter (chapter 18, section E). They are a simplification of the national framework and are focused on production, employment, or household activities.

2.4.   The European System of Accounts (ESA), in adapting the SNA to the European Union (EU), gives greater attention to regional accounts, because of the need for data to apply certain policies – e.g., territorial equalization funds. As a result, the regional data form part of the required reporting program for EU member countries. The 1995 version of the ESA (which in fact came to be called the "European System of National and Regional Accounts, 1995") already included a chapter dedicated to regional accounts (Eurostat, 1996); a handbook of four regional GVAs and FBCs was also published in 1995 (Eurostat, 1995). The concept is maintained in the latest version, ESA 2010[3] (European Commission, 2010). This paper will return to the concept in Chapter 5. However, not even the EU framework provides a regional accounting framework as complete as the one defined for a country in the SNA and ESA.

2.5.   Reasons of an essentially conceptual nature, as described below, prevent the construction of a complete system of accounts at the regional level. Apart from those objective reasons, however, it must not be forgotten that methodologies like the SNA or ESA are intended not for the construction of a specific regional account but for territorial distribution of a country's national accounts. Naturally, without entering here into institutional issues, it is not proposed to estimate the parameters for a region as if it were a country (this paper supports a coordinated and joint estimation of RTSAs by central and regional governments). The two are separate, which partly explains the secondary role assigned to regional accounts in national accounting manuals.

2.6.   With respect to the conceptual obstacles to the development of a complete system of accounts at the regional level, first and foremost among them is the complexity of defining the economic territory of a region and assigning to it its resident units. National accounts relate to the economic activities conducted within the "economic" territory of a country, and the units from which data are gathered are those that "reside" in that country. An enterprise, for instance, is considered to reside in a territory if it has an office or establishment in that territory dedicated to a production activity.

---

[3] At the time this document is being written (2012) there is still no definitive text for ESA 2010, which is to be approved and published in 2013. Use has been made here one of the freely accessible versions, the one presented for discussion in the European Parliament in December 2010 (see bibliographical reference to the European Commission (2010)).

2.7. However, as described in Annex 2 to this paper, the application of these criteria at the level of a region poses certain difficulties, as in the case of multiregional enterprises, for instance, i.e., national enterprises that have establishments in different regions, agencies of the State or central government, etc. For enterprises or administrative units of that kind it is not possible to construct a complete system of accounts at the regional level, because some accounting system transactions (such as distributional or financial transactions) cannot be assigned to one particular territory or another.

2.8. The system of regional accounts is therefore restricted to those elements of the accounting system that pose the fewest problems for allocation to a region, such as establishments dedicated to production (a factory or hotel) and production or employment operations, although their regionalization sometimes requires agreements and hypotheses (Annex 2 indicates some of these problems and solutions to them). It is also possible to allocate certain demand operations regionally, such as household final consumption expenditure, and, with some additional hypotheses, gross industrial capital formation.

2.9. In fact, I-O tables (and more recently supply and use tables) have been regularly constructed for decades in certain countries: Spain, the Netherlands, Canada, and the Northern European countries. In other words, while the peculiarities described above prevent the construction of complete regional systems, of the SNA or ESA type, it is in fact possible to arrive at valid regional estimates of the accounting elements necessary for a TSA: accounts for industrial production and operation, employment and demand in the form of household final consumption expenditure.

2.10. This conditioning factor for regional accounts needs to be considered in proper perspective, because for at least a part of the system that is crucial for the construction of a TSA – production and operation transactions as well as employment and GFCF – it is feasible to conduct measurements at the regional level, as recognized in SNA 2008 (chapter 18).

"These conceptual difficulties explain why regional accounts are centred on recording production activities by industry and more complete accounts for institutional sectors composed of regional units, such as households and local and state government. Establishing accounts for goods and services and input-output tables by region does not raise insoluble conceptual issues, though it involves treating deliveries to and from other regions as exports and imports (…)."

2.11. Another type of challenge stems from the difficulty of combining certain regional account criteria with TSA concepts that serve to delineate tourism from the demand perspective. One such challenge, for both conceptual and practical reasons, is delineation of usual environment, which represents an additional layer of complexity in the case of regional estimates, specially if the reference for TSA compilation are the regional accounts. It should be noted that in both national and regional accounts household residence – that is, the territory to which households are assigned for accounting purposes – is that where they have their place of usual residence (SNA). In many cases, the region where they live may not coincide with the region where they work or engage in other daily activities.

2.12. Again, as in the case of the challenges to the regionalization of supply, it must be determined whether these complexities in the delineation of demand are an insoluble obstacle to the construction of regional TSA's. The answer is no. It is true that the current solutions are neither unique nor perfect, that continuing progress is still required in this field and that acceptable and internationally comparable sources and methods must be found (one of the efforts being made by the INRouTe network, for instance, is the analysis of regional and subregional mobility connected or closely interrelated with tourism travel).But these facts are not an impediment to the construction of a valid system for measuring tourism demand from the TSA perspective.

2.2. An initial proposal for a regional TSA

2.13. This section covers the characteristics of a proposal for a regional TSA. The idea is to transpose within a regional context the basic standards of TSA:RMF 2008. Although it is described as an initial proposal for a regional TSA, the framework is sufficiently complete, in that it contains the essential elements of TSA:RMF 2008, but also realistic, in that it is based on the actual experiences of specific regions.

2.14. The adaptation of the Tourism Satellite Account for use at subnational levels can be viewed in terms of two possible approaches (TSA:RMF 2008, Annex 7):

- "The interregional approach, which would be common to all the regions of the national territory […]. It is an approach that relies on the existence of a national Tourism Satellite Account and the availability in each region of uniform tourism information for each of the tables and aggregates to be regionalized.

- The regional approach, which would entail the development of a specific Tourism Satellite Account for any given region [...]."

2.15. In the interregional approach, the national TSA or some of its elements are disaggregated regionally on the basis of indicators. It is a valid approach but its scope is extremely variable. It generally tends to focus only on the set of elements needed to obtain broad accounting aggregates (tourism consumption, tourism GDP, etc.).

2.16. What this document proposes to do is in line with the second approach, developing what is hereinafter called a "Regional Tourism Satellite Account" (RTSA) in accordance with UNWTO terminology (1995). The idea is to establish a complete TSA framework (with certain exceptions discussed below), designed and developed from a regional perspective, attempting to gather all of the elements essential to tourism activity from an economic perspective and to reflect the weight of tourism in its economic structure. Our approach does not, however, abandon the national perspective or the connection with the country's overall TSA framework, which should be an obligatory reference point for regional TSA's (this will be discussed in section 3).

2.2.1. Brief refresher course on the basic elements of a national TSA

2.17. To establish the elements that such a regional TSA would contain, it appears useful at this point to briefly recall what a complete TSA consists of (detailed tables and classifications are provided in annexes 3 and 4). TSA UNWTO, as referred to in the TSA:RMF 2008 manual (UNWTO and others (2008)) is today strictly accepted as the international reference standard for the construction of a TSA.

2.18. Some of its fundamental features:

i. As usual in a "satellite account", the TSA represents an application of SNA concepts and structure (essentially the supply-use tables) to the study of tourism.

ii. It is necessary to construct such a TSA because tourism cannot, by definition, be found explicitly in national accounts: tourism is initially a demand phenomenon, expressed economically in terms of spending by economic agents connected with specific types of travel (travel defined as tourism in TSA:RMF 2008). It can therefore be characterized not as a set of specific products but as the circumstances that give rise to their acquisition

(travel). Therefore, tourism is a phenomenon that cuts across the classifications and concepts of national accounts, potentially affecting many different products, and thereby the various activities or industries that endeavour to meet tourist demand. So the initial objective of a TSA is to extract the tourism figures implicit in the accounting data.

iii. Despite the crosscutting and sometimes non-explicit character of tourism in national accounts, there are industries that do specialize in the products generally purchased in connection with travel: transport and accommodation services, travel agencies, restaurants, etc. These are referred to as "tourism industries", and TSAs obviously need to give them particular attention.

2.19. TSA:RMF 2008 identifies 10 (types of) tables, the first six of which constitute the core of this account:

- Four tables designed to reflect the details of tourism consumption, the principal demand variable, disaggregated into its basic components: inbound tourism expenditure (Table 1), domestic tourism expenditure (Table 2), outbound tourism expenditure (Table 3), and, derived from the first three tables, a table showing internal tourism consumption (Table 4), a crucial variable for all TSAs (section 5 of this document analyzes these concepts).

- Another table, Table 5, refers to data on supply, containing information on the production and operation accounts of tourism industries, with details on finished products as well as the inputs used (referred to in TSA:RMF, for the sake of simplicity, as "production accounts").

- A Table 6 connects each of the above components of supply and demand to obtain an estimate of the gross value added (GVA) generated by each tourism supply industry.

2.20. In addition to these six basic tables there are six additional tables on relevant economic aspects: Table 7 on employment in tourism industries; Table 8 on investment in productive capital ("gross fixed capital formation", or GFCF in the terminology of national accounts); and Table 9, containing data on collective tourism consumption. Of these, Table 7 on employment can largely be included within the group of the four basic tables for the TSA (since one of the distinctive characteristics of tourism is its capacity for generating high levels of employment per unit of output).

2.21. Lastly, there is a Table 10 that is in reality a compendium of very different tables: a set of indicators on tourism flows, on the characteristics of enterprises (ratios according to size of the enterprise), etc. These data are undoubtedly of great value when it comes to characterizing tourism in a nation or region but are not indispensable for development of the account. They are included because of the desire of the authors of the TSA:RMF to highlight that a TSA cannot be developed in a vacuum, that is, in the absence of diverse statistical information, often nonmonetary but crucial to the calculation of supply and demand in the TSA: for example, without data on foreign visitor flows, it does not appear feasible to estimate inbound consumption consistently.

2.22. Table 10 has also been included in TSA:RMF for the sake of countries without solid databases, so that development of a TSA can be the point of departure or seed for a system of tourism statistics. This table is largely redundant for countries with minimally complete systems of tourism statistics.

2.23. The combined use of these tables yields two extraordinarily important types of information:

- A structured, uniform and internationally comparable set of economic information on the tourism industries, making it possible to define a tourism cluster, or "tourism sector" to use the abbreviated concept applied by INRouTe and UNWTO [2012](though running counter to the orthodox principles of national accounts - Cañada, 2012 -).

- Macro indicators such as tourism GDP, which can be used to capture in a few figures the magnitude of tourism's contribution to the economy.

2.24. The structure of a TSA, it should be recalled, is an application to the field of tourism of a subsystem of the System of National Accounts (SNA 93/ESA 95): supply and use tables (SUT). SUT provide the details on production and demand in an economy and constitute (or should constitute) the basic building blocks for any national accounting system (Cañada, 2010).

2.2.2. A proposal for a regional TSA

2.25. The point of departure for this proposal was the observation that a regional-scale TSA cannot include all of the elements and tables found in TSA:RMF, given the limited availability at subnational levels of information that is key and indispensable to the development of any TSA.

2.26. Drawing from the experience of other countries and regions, from the TSA recommendations, and from seminal work in this field by such authors as Frechtling [2008] and Jones [2008], Table 2 constitutes a proposal for the elements that a regional TSA should contain. It starts from the complete structure of the TSA:RMF tables and indicates in the right-hand column those to be included in the scaled-back coverage of the regional TSA. The structure proposed, e.g., by Frechtling (2008),consists of four basic tables on internal tourism consumption, production accounts, supply and demand, and employment.

2.27. The elements of this RTSA are described below:

1) Table 1. Internal tourism consumption

For any TSA, from the most ambitious to the most basic, estimating tourism consumption is the key to the entire system. It is the generating, activating element for the economic impact of tourism within the territory covered.

As proposed, it would be sufficient to prepare a single table for this variable. It should be recalled, however, that Table 4 of TSA:RMF, like this Table 1 of the RTSA, is in reality a compendium of the other tables, requiring the estimation (admittedly in less detail) of both inbound tourism consumption and domestic tourism consumption (Tables 1 and 2 of TSA:RMF).

Table 1. Proposal for the basic elements of a regional TSA

TSA:RMF tables	Proposal for an RTSA	
	Title	**Details**
Table 1. Inbound tourism expenditure	---	(Included in summarized form in Table 1)
Table 2. Domestic tourism expenditure	---	(Included in summarized form in Table 1)
Table 3. Outbound tourism expenditure	(*)	Not included (*)
Table 4. Internal tourism consumption	TABLE 1. Internal tourism consumption	Breakdown by consumption products and components: inbound tourism expenditure; domestic tourism expenditure; other components of tourism consumption.
Table 5. Production accounts	TABLE 2. Production accounts of characteristic industries	Breakdown: production and operation accounts by branch of tourism activity.
Table 6. Domestic supply and internal tourism consumption	TABLE 3. Supply and internal tourism consumption	Minimum proposal: a) Totals for supply operations: production; imports; taxes net of subsidies; commercial and transport margins. b) Production matrix based on supply table, plus "indirect" or "endogenous" product ratios
Table 7. Employment in the tourism industries:	TABLE 4. Employment in the tourism industries.	Minimum breakdown: employment positions, differentiated according to: a) salaried or unsalaried; b) full or part time. Hours worked.
Table 8. Gross fixed capital formation of tourism industries	TABLE 5. GFCF of the tourism industries. ***(Voluntary)***	Minimum breakdown: asset categories.
Table 9 Tourism collective consumption	---	Not included
Table 10. Monetary and nonmonetary indicators of demand and supply	Table Annex 1. Indicators of demand and supply ***(Voluntary)***	Suggested minimum proposal: - Inbound tourism: no. of arrivals and overnight stays. - No. of establishments and collective accommodation capacity. - No. of establishments in the tourism industries.
	Table Annex 2. The region's external balances for tourism consumption ***(Voluntary)***	- Best: Complete matrix of tourism consumption by region of supply/use. - Second-best: Inbound and outbound tourism consumption according to principal regions of supply/use.

(*) This concept can be approximated if the RTSA includes the table in Annex 2.

2)   Table 2. Production accounts of characteristic industries.

To construct a TSA it is essential to include data from the production and operating accounts of the tourism industries:

-    Production account. Two types of variables are included here: production and intermediate consumption. The difference yields the GVA. For both production and intermediate consumption a breakdown by type of product must be included; this issue is discussed in Box 1 below.

-    Operating account. Two essential variables are to be estimated in this account: "remuneration for unsalaried workers" and "other taxes net of production subsidies", since a third variable included here, the operating surplus and/or mixed income, is in reality a balance obtained from the difference between the GVA and the two aforementioned variables.

Box 1. Production and intermediate consumption: proposal for their classification in the RTSA.

To define the level of disaggregation at which the production and intermediate consumption variables are to be estimated, the fundamental reference is that contained in TSA:RMF 2008. On the other hand, if the RTSA is being developed on the basis of available regional SUT (this is one of the initial assumptions of our model) the level of detail of these two variables has to be linked to that provided by the SUT, adapted as appropriate for specific tourism products.

Column A below shows a breakdown of production by products as necessary to complete the supply table. The main, upper portion provides a breakdown of the characteristic products to be used in defining the TSA. Other products have been added ("other market production") to reflect that the measurement of the industries' production must be exhaustive, covering not only the characteristic products but also any other type of market production generating income for the industries (a hotel, for example, can earn income by renting office space, organizing conferences and events, exchanging currencies, etc.).

A) Classification of production in the RTSA

1) Characteristic products (see complete information in Annex 3)
- Regulated accommodation services
- Private accommodation services
- Food and beverage supply services
- Passenger transport services
…..
2. Tourism-related products
3. Non-tourism-related consumption products
4. Objects of value
5. Other

B) Classification of intermediate consumption in the RTSA by product categories

- Agricultural products
- Mining and energy
- Industrial products
- Construction
- Commercial, transport, hotel services
- Financial, real estate services
- Business services
- Community, social and personal services
……

Column B shows the proposed breakdown, fairly aggregated, for intermediate consumption, according to the principles of TSA:RMF 2008. The idea is to take a realistic approach to the availability of information on this variable. Accordingly, the recommendation is confined to the divisions of the international classification of products (CPC). Naturally, as occurs with the breakdown of production, when SUT for the region are available, the level of detail of these two variables has to be linked to that offered by these accounting tables, adapted for specific tourism products. It is also a matter of correctly showing how tourism activities and the two variables, production and intermediate consumption, are interrelated throughout the economy and in the classification of the SUT. This is so not only for statistical and accounting reasons but also with a view to possible extensions of the RTSA to include impact evaluation models.

---

3)   Table 3. Supply and internal tourism consumption

This would be equivalent to Table 6 in TSA:RMF 2008, which is a crucial table for closing the accounting system and obtaining GDP. It contrasts the data on supply by industry and on demand by product, yielding aggregates that quantify the relevance of tourism in an economy (tourism GVA or tourism GDP).

A more or less realistic proposal for minimum content would be as follows:

a)   The totals for supply operations: production; imports; taxes net of subsidies; commercial and transport margins.

b)   A form of production matrix based on the regional supply table, together with "indirect" or "endogenous" tourism ratios by product. This issue is discussed in subsection D below.

4)   Table 4. Employment in the tourism industries.

Employment by industries should be given a prominent place in a TSA – for one reason because no measurement of the economic impact of tourism could be considered complete without including an assessment of the employment connected with the tourism industries.

There are also reasons from a purely accounting or measurement perspective: for some activities, the estimation of output and GVA should go hand-in-hand with the estimation of employment, as happens in many service sectors, including those most significant for tourism (such as café and restaurant services).

As always, less content is proposed for the regional level than found in TSA:RMF. Information is required first of all on the variable "jobs", differentiated in two ways: first according to category (salaried vs. unsalaried), and second according to type/duration (full- or part-time). The variable "hours worked" is also included. With this information (and other possible indicators) it would in reality be possible to approximate any of the other measurements found in a TSA by analogy with the national accounts (for example, on a full-time equivalent jobs.

5)   Table 5. GFCF by industry

The inclusion of a table on GFCF by industry is proposed as a voluntary matter. It is the kind of information that, while not crucial to the TSA, is relevant in general for the purpose of evaluating the impact of tourism enterprises. The feasibility of including this table naturally depends on the availability of statistics. Worth recalling in this regard are the comments made about regional information in the context of the European Union: GFCF is included in the obligatory program of estimations, and several countries apply it. But the level of breakdown requested, or that countries usually estimate, does not reach down to the level of characteristic tourism industries.

2.2.3. Territorial scope of the RTSA proposal: regional and subnational levels: Regions and subnational entities

2.28.   To complete the definition of the RTSA it is necessary to delineate what is meant here by region, that is, the type of territorial unit in which the proposed structure can be developed. Without seeking to establish strict criteria, two principles appear to be the most appropriate when delineating the territory to be covered by an RTSA:

   a)   It must correspond to an administrative and political entity in the country (i.e., with capacity for action and the administrative structure needed to establish and sustain an RTSA project).

   b)   The territory concerned should have the minimum level of statistical information required as the basis for an RTSA.

2.29.   Examples of this type of unit include the European Union's Nomenclature of Territorial Units for Statistics (NUTS), the official system used by the EU to classify subnational territories for statistical purposes. It subdivides the territory of member states at three levels, in hierarchical fashion: dividing the entire member State (NUTS 1), then dividing each of those subdivisions (NUTS 2), and subsequently dividing each of those smaller subdivisions (NUTS3). Established in the early 1970s they were initially based on a "gentleman's agreement" between Eurostat and the member countries before assuming legal status in 2003.

2.30.   The territorial units are defined according to the administrative units already existing in the member States and the NUTS level to which an administrative unit belongs is determined on the basis of demographic thresholds.

Table 2. Definition of NUTS according to population threshold

Level	Minimum population	Maximum population
NUTS 1	3 million	7 million
NUTS 2	800,000	3 million
NUTS 3	150,000	800,000

2.31.   The most interesting aspect of this European classification is that, apart from its other uses, it has served as the basis for defining a body of statistical information with binding obligations for the countries and has contributed to the configuration within the European Union of a regional statistical system, albeit limited. In general, the fundamental level for policy application, and thus the most important level of in terms of statistical obligations, is NUTS 2, which in most European countries corresponds to an administrative entity. This is a subject we shall return to in Epigraph 2 of this document.

2.3.   Tourism consumption as a key variable of the regional TSA

2.32.   Among the principal features of a regional TSA methodology is "tourism consumption", the principal demand variable in a TSA. Reproduced below is the familiar conceptual framework provided by TSA:RMF and its adaptation to the regional level (Diagram 1). Annex 5 provides an explanation about the concepts of tourism consumption and national account variables.

Diagram 1. The concepts of tourism consumption in national vs. regional TSAs

1A) The concepts of tourism consumption in a national TSA.			
Residence of the traveller	**Territory where expenditure/consumption takes place**		TOTAL
	Economic territory	Rest of the world	
Residents	Domestic tourism consumption	Outbound tourism consumption	NATIONAL TOURISM CONSUMPTION
Non-residents	Inbound tourism consumption		
TOTAL	INTERNAL TOURISM CONSUMPTION		

1B) Adaptation of the concepts of tourism consumption to the regional level.					
Residence of the traveller	*Territory where expenditure/consumption takes place*				TOTAL
	Economic territory(region)	Outside the region			
		Other regions	Rest of the world		
Residents	Domestic tourism consumption	Outbound tourism consumption *in other regions*	Outbound tourism consumption *in other countries*		REGIONAL TOURISM CONSUMPTION
Non-residents of the region — Other regions	Inbound tourism consumption *from other regions*				
Non-residents of the region — Other countries	Inbound tourism consumption *from other countries*				
TOTAL	INTERNAL TOURISM CONSUMPTION				

2.33.   "Domestic tourism consumption" consists of expenditures related to: domestic tourism, that is, individual tourist travel within the territory where they "reside"; and travel to other areas, as materialized in the purchase of services within the territory of residence. The most obvious example is where a resident uses a local travel agency to organize travel abroad: the agency's production (the commissions it charges for its services) occurs within the territory of origin. Another example would be where the resident travels abroad using a resident transport company.

2.34.   "Inbound tourism consumption" consists of expenditure linked to non-residents travelling to the territory concerned. It includes two types of expenditure (see Annex 1): expenditure directly incurred or occasioned by non-residents in the economic territory (the national account concept of "consumption by non-residents in the economic territory"); and services provided by resident units to non-resident visitors (for example, when a non-resident tourist arrives in a territory using a resident transport company, treated in national accounts as service exports).

2.35.   In an analogous way, outbound tourism consumption includes tourism-related expenditures by residents in the "rest of the world" (treated in national accounts as "consumption by residents in the rest of the world" – see Annex 1) as well as other imports related to tourist travel (essentially transport).

2.36. Added together, the two components appearing in the row for travel by residents yield "national tourism consumption"; the sum of components in the column for expenditure attributable to resident producers represents "internal tourism consumption".

2.37. Diagram 1B is an adaptation of Diagram 1A to the regional level. The concepts are equivalent to those at the national level, except that now the territory of reference corresponds to each region. The fact that each region is treated as a perfectly defined entity from an economic/territorial point of view means that all transactions with other regions need to be recorded as transactions with the rest of the world, like those of a national economy relative to other countries. For a region, the rest of the world includes not only other countries but the rest of the national territory concerned – i.e., other regions of the country.

2.38. Thus, the "domestic tourism consumption" of each region corresponds to domestic tourism, i.e. travel by tourists within their own region. It also includes expenditure related to travel to other regions if materialized in the purchase of services in the region concerned (as in the previously mentioned cases of travel agencies or transport companies residing within the region concerned).

2.39. Inbound tourism consumption would consist of two components: expenditure related to travel to the region by non-residents, which includes non-residents from other countries as well as other regions. Similarly, "outbound tourism consumption" includes travel expenditure outside the region, including the territory of other regions as well as other countries.

2.4. The supply/demand contrast and tourism coefficients for products and industries: The definition of tourism-related GDP

2.40. The aggregate indicators of relevance to tourism, such as tourism GDP, are defined very clearly in TSA:RMF. They are obtained in three steps: first the measurement of demand (expenditure) connected with tourist travel; second, the definition of supply, identifying the various economic sectors producing goods and services for tourism and measuring that production for each sector; and third, determination of tourism GVA by industry, calculating the intermediate consumption of tourism production (which can be based on statistics or indirect calculations). The total value added by all activities connected with the supply of products to tourists, together with taxes net of subsidies connected with tourist demand, permits the calculation of tourism GDP[4].

2.41. Calculating GDP is possible thanks to TSA Table 6, which refers to "tourism ratios" by product and industry (see TSA:RMF, epigraph 4.50), which includes:

- A column showing tourism ratios by product: internal tourism consumption as a proportion of total supply.
- A row showing the ratio of tourism production to total production for each industry.
- As indicated in 4.56, these ratios by industry can be used to calculate tourism GVA, assuming simple proportionality in the case of intermediate consumption.

---

[4] Some countries (Spain) supplement this TSA:RMF-recommended estimation with an estimation of the contribution of tourism to GDP, which is easier to obtain and more all-inclusive in terms of the global effects of tourism (on the economy as a whole). They treat final tourism demand (net of imports and assuming that valuation issues have been properly handled), which is essentially what tourism consumption consists of, as contributions to GDP. This undoubtedly more complete measurement of the effect of tourism on an economy (tourism GDP) has not been incorporated within TSA: RMF, because the latter's emphasis, main concern, and primary contribution to the measurement of tourism is to define tourism industries by means of a complete and internationally comparable and recognized accounting system – and also, in our view, because of some misunderstandings. One such misunderstanding is a conceptual error as to what GDP consists of and how it is measured, even though, as observed in TSA: RMF itself (4.84): "[…] It should be recalled that GDP, at aggregate level, is equal to the sum of final demand net of imports in an economy". Another is a certain uneasiness about the potential implications of including this definition: if contribution to GDP can be determined by a simple measurement of final tourism-related demand, one could question the need for constructing a TSA at all. Nothing could be further from reality. The TSA is necessary because even in a calculation based on final demand, there are aspects that can only be measured correctly using an accounting system like the TSA (the import content of final demand, taxes and subsidies, margins in the distribution of goods consumed by tourism, etc.).

2.42. As indicated in the TSA:RMF (4.52) the information can be obtained from:

- Direct information provided by producers and suppliers.
- Visitors themselves (sample surveys of expenditure by product and indication of providers).
- The opinions of experts in the field of tourism behaviour, provided these opinions can be validated through best practices (judgmental procedure).

2.43. Other more debatable, but also more accessible, solutions are suggested in our proposal: Table 2 refers to using "indirect" ratios that could be taken from the national TSA, or as a possible compromise solution, applying ratios obtained from estimates in the same account ("endogenous") to the total for products. This would require a reliable estimate of tourism consumption by product for comparison with total supply in the regional supply table, to obtain a ratio by product. That ratio would subsequently be applied to all of the industries.

Box 2. The Tourism Satellite Account of the Community of Madrid as an example of a regional TSA

The TSA for the region (Community) of Madrid was presented in 2011. It provides an example of a regional TSA that follows most of the recommendations contained in this paper: from an institutional standpoint, in that it was designed by the Community of Madrid itself but with the collaboration (in this case direct participation) of TSA experts in Spain; and from a statistical and methodological point of view, because it combined "top-down" or regionalizing procedures – through the use of national sources disaggregated by region – with strictly regional procedures – based on use of the region's own statistical sources. Section 5 and Table 6 of this document provide more information on this statistical system of the Community of Madrid.

Table 1. Macro-magnitude series (GDP and employment) in the TSA of the Community of Madrid. 2006-2010
(thousands of euros and thousands of jobs)

	2006	2007 (P)	2008 (A)	2009 (A)	2010 (1ªE)
Tourism GDP (Current prices)	8,582.6	9,572.0	9,865.7	9,927.9	10,455.1
GDP C. Madrid (Current prices)	182,010.6	195,162.2	200,322.2	194,816.7	198,259.3
Year-to-year variation (Tourism GDP) (%)	-	11.5	3.1	0.6	5.3
Year-to-year variation (GDP) (%)	-	7.2	2.6	-2.7	1.8
% (Tourism GDP/GDP C. Madrid) (%)	4.7	4.9	4.9	5.1	5.3
% (Tourism GDP C. Madrid/Tourism GDP Spain) (%)	8.0	8.5	8.6	9.4	9.7
Volume index (Tourism GDP)	100.0	107.7	107.6	107.7	..
Volume index (GDP C. Madrid)	100.0	103.5	104.7	101.7	..
Year-to-year variation (Vol. ind. Tourism GDP) (%)	-	7.7	-0.1	0.1	..
Year-to-year variation (Vol. ind. GDPC. Madrid) (%)	-	3.5	1.2	-2.9	..
Tourism-related employment (jobs)	166.6	168.8	178.4	181.6	..
Total employment C. Madrid (jobs)	3,325.1	3,340.0	3,317.3	3,141.0	..
% (Tourism employment/ Total employment) C. Madrid	5.0	5.1	5.4	5.8	..
% (Tourism employment C. Madrid/Tourism employment Spain)	10.6	10.7	10.7	..	..

Source: Tourism Satellite Account of the Community of Madrid (2006-2010).

Table 1 corresponds to a table included in the publication of the Community of Madrid's TSA summarizing the results of an accounting series with two basic aggregates: tourism GDP and employment. Like the TSA for Spain, it includes a calculation of the evolution of tourism GDP at constant prices[5], obtained by deflating the TSA's original series on tourism consumption.

2.44. This proposal naturally applies to this first exercise in estimating a regional TSA (which is necessarily experimental in character). It would be necessary in a second phase to think about developing specific procedures and statistics for use in estimating these tourism ratios by product and/or industry. This issue in any case represents one of the greatest challenges in developing a TSA, not so much in conceptual as in statistical terms. As Jones [2008] has very correctly noted, this is a basic problem for TSAs as well as RTSAs and is an area ripe for research in future programs. As indicated by Jones, for example, the emphasis in visitor surveys could be shifted from "products (consumed)" to the industries supplying travellers with those products.

---

[5] Or in orthodox national accounting terms, "volume indices" (SCN 2008).

3.   Adapting the TSA to the regional context (II): Methods and sources

3.1.   Methods of estimating RTSA: general aspects

3.1.   Following the conventional approaches taken to regional accounts (ESA 1995, par. 13.15) there are two main types of procedures for estimating accounting data at the regional level: top-down and bottom-up.

3.2.   The top-down methods entail the distribution of a national figure among the various regions using a key indicator that reflects, so far as possible, the variable to be regionalized. Bottom-up methods consist of regional estimation per se: using statistical data disaggregated by region to obtain their economic parameters.

3.3.   Applying these criteria, Table 1 summarizes the main advantages and disadvantages of each of the two options usually used for the regional exercises and approximations of a TSA.

Table 3. Approaches to regional estimation: top-down vs. bottom-up methods

	Top-down approach: deriving regional estimates from national estimates	Bottom-up approach: making estimates at the regional level
Requisites	TSA:RMF (2008): [requires] "the existence of a national TSA and the availability in each region of uniform tourism information for each of the tables and aggregates to be regionalized".	Requires: a) the availability of SUT for the region; and b) sources of statistics on tourism at the regional level.
Advantages	Guaranteed consistency among all regional estimates in terms of: a) data; and b) concepts	The statistics and methods are adapted to regional realities (based on regional information).
Disadvantages	Possible limitations in terms of reflecting regional specificities.	The comparability of estimates with those from other regions, and even with national estimates, is not guaranteed.

3.4.   The most positive aspect of the top-down procedures is coherence and compatibility among the estimates obtained for different regions. The main disadvantage is that top-down estimates may not adequately take account of the specific characteristics of each region (those pertaining to tourism activity, for instance).

3.5.   Turning these reasons around gives us the advantages (closeness to regional reality) and disadvantages (no guaranteed compatibility between data for the region concerned and data from other regions, or even national data) of a bottom-up or regional approach.

3.6.   In practice, essentially for statistical reasons, regional estimation processes usually combine both approaches. The ESA itself speaks of "mixed methods" (ESA 2010, p. 13-15), and it is common practice for countries to combine national data and sources that are regionalized based on estimates that are purely regional in scope.

3.7.   A realistic assessment of these procedures suggests that the mixed methods are to be preferred. We therefore examine such a methodological approach in the light of institutional aspects, because the approach taken to the project and the method of estimation selected depend greatly on the type of institution that will be promoting and/or developing a regional TSA. If that institution is of regional character, then a bottom-up approach is appropriate; for initiatives and projects conducted by statistical institutions of the central government (central statistical offices), a top-down approach is usually taken.

3.8.   As affirmed in TSA:RMF (2008) the optimal approach is one that results in every case from joint efforts by the various levels of government (central and regional). Such joint efforts entail a mixture of procedures, both bottom-up and top-down. This is the ideal "intermediate" way between the two approaches, methodological and institutional. The advantage is being able to take advantage of the resources used by central and regional institutions and to guarantee that the two types of estimates are compatible, at least in terms of the essential aspects or variables.

3.2.   Methods of estimating tourism consumption and the interregional consumption matrix

3.9.   It is sometimes not feasible to rely on information sources in regional areas. As pointed out in TSA:RMF 2008 (Annex 7) "although officially there are administrative boundaries separating the regions, there is free movement of people, goods, services, capital, etc., which means that no instruments are in place for monitoring flows to and from the region." When the regional framework is introduced in the analysis it becomes necessary to make explicit what has been recognized as a basic objective of, but also an indispensable condition for, the development of an RTSA: an interregional tourism consumption matrix, as shown in Diagram 3, with rows for tourism consumption by the traveller's region of residence or origin and columns for the regions of travel destination. The cells arranged diagonally (CIN_{11}, CIN_{22}, CIN_{nn}) represent consumption of travel by residents of a region within that same region, i.e., what the TSA calls "domestic tourism consumption", but applied regionally. For example, CIN_{11} represents consumption connected with tourist travel by residents of Region 1 within Region 1. It is important to remember that this includes, apart from expenditures connected with domestic travel, expenditures connected with travel to other regions if materialized in the purchase of services in the traveller's own region (for instance from a travel agency in the region of origin prior to departure).

Diagram 2. Interregional tourism consumption matrix

		Territory of destination where expenditure/consumption takes place					Total consumption by residence of the traveller
		Region 1	Region 2		Region n	Rest of the world	
Residence of the traveller	Region 1	CIN_{11}	CIN_{12}	......	CIN_{1n}	CEM_1	C_{1*}
	Region 2	CIN_{21}	CIN_{22}	......	CIN_{2n}	CEM_2	C_{2*}
	......	......	......	......	......	......	......
	Region n	CIN_{n1}	CIN_{n2}	......	CIN_{nn}	CEM_n	C_{n*}
	Rest of the world	$CREC_1$	$CREC_2$	......	$CREC_n$		$CREC$
Total consumption by territory of destination		C_{*1}	C_{*2}	......	C_{*n}	CEM	

3.10.   The other cells refer to travel expenditures connected with inbound tourism/outbound tourism, depending on the perspective taken. But again, this refers to travel-related expenditures: for example, CIN_{12} would include travel related expenditure by residents of Region 1 visiting Region 2. If analyzed from the standpoint of the "receiving" region, Region 2, this would not include expenditure made by the traveller previously, in his region of origin (which, as indicated, is included within CIN_{11}, domestic tourism consumption). Conversely, it is not confined to the traveller's expenditure in the region of destination, but would include, for instance, payments to a transport company residing in the region of destination. In more precise accounting terms – see Annex 5 – it would include consumption by non-residents as well as other travel-related exports.

3.11. Apart from possible complexities in estimation, the most important aspect of these matrices is their compatibility, by definition, in the estimation of tourism consumption in regions of origin as well as destination, which the matrix design is intended to obtain simultaneously.

3.12. Two elements are added to the matrix to take into account a country's flows vis-à-vis the rest of the world, but disaggregated regionally: anything in the row "rest of the world", such as $CREC_1$, represents the country's inbound tourism consumption, but in the cell corresponding to Region 1; by the same token, in the column "rest of the world", CEM_1 represents the country's outbound tourism consumption in the cell corresponding to foreign travel by residents of Region 1.

3.13. The column and row totals provide the aggregates for the variable "internal tourism consumption" in each region, which would be the total of the corresponding column. For Region 1, for instance:
$C_{*1} = CIN_{11} + (\sum CIN_{h1} + CREC_1)$ [1]
in which CIN_{11} is the region's domestic tourism consumption, CIN_{h1} represents consumption of travel to Region 1 by residents of any region (h), and $CREC_1$ represents expenditure on travel to Region 1 by foreign residents.

3.14. The foregoing results in some interesting consequences, not only for the development of regional TSA's but for something more general and fundamental: estimation of the "rest of the world" in regional accounts and input-output tables. Except for some slight methodological differences, that estimation provides an initial approximation of the data for "consumption by non-residents in the (regional) territory" and "consumption by residents (of the region) in the rest of the world", as well as other components of tourism-related exports and imports.

3.3. General criteria for the estimation of interregional consumption matrices: differentiation of products according to origin and intended use

3.15. From the standpoint of practical estimation, it is clear that interregional consumption matrices require a considerable level of information. Few statistical systems in the world can provide all of the data necessary for the estimation of these matrices. It is precisely their exceptional character, as in the case of Spain, for instance, that makes them an example in this field.

3.16. There is, on the one hand, a statistical source: a survey on tourist travel by Spanish households (known as FAMILITUR) that provides information on total expenditure on tourist travel by regions of supply and use. Although there are problems with the survey's sample size that make it difficult to complete some cells in the matrix for certain periods and certain less populated regions, such cases are exceptional relative to the total volume of Spanish domestic travel.

3.17. There are, however, other statistical sources that refer to nonmonetary data but that offer information on significant tourism industries. The surveys conducted by the National Statistical Institute (INE) on the occupation of collective accommodation establishments, for instance, provide data on the number of overnight stays by Spanish residents by region of origin and region of destination. Those data can be used to prepare a matrix of interregional physical flows. This matrix can then be transformed into a monetary matrix using information provided by INE's economic surveys on this sector (hotel price indices and income).

3.18. It must be noted in any case that the initial approximations and measurements described above provide only a rough version of tourism consumption by region. In order for an RTSA to provide meaningful consumption figures (see section 2.3 of this document) it is necessary to differentiate, in the statistics and calculation methods used, between expenditures occurring in the place of "origin" and those occurring in the place of "destination". It may be useful to consider a

classification system like the one in Table 4 below, in which the most representative travel expenditures (those by a resident of Region 1 travelling to Region 2) have been differentiated by product according to the place where the products are usually acquired.

Table 4. Expenditure by a visitor residing in Region 1 and travelling to Region 2: place where consumer spending is preferably recorded

Consumer spending linked to the territory where travel originates (Region 1)	Consumer spending related linked to the traveller's territory of destination (Region 2)
- Long-haul transport - Travel agency services (place of origin) - Goods and services acquired before and after travel (clothing, photographic materials, gasoline, insurance, etc.) - Vehicle rental(*)	- Accommodation - Restaurant services - Urban transit or short-haul transport - Travel agency services (place of destination) - Vehicle rental(*) - Recreational/cultural/sporting activity - Other goods (handicrafts, souvenirs, miscellaneous, etc.) and services consumed during travel in the area of destination - Commercial margins. - Other services.

(*) Some categories are divided between the two possible territories of acquisition.

3.19. The left-hand column shows the products for which expenditures are often incurred in the region of origin, such as travel agency services located in the place of residence or use of a transport company located in the place of origin. The right-hand column shows the kinds of expenditure generally incurred in the region of destination, referring more restrictively here to products that by definition can only be consumed in the place where they are supplied (produced): accommodation, restaurant and bar services; urban transit in the place visited, cultural or recreational services, etc.

3.20. While the differentiation indicated in Table 4 is approximate, it can be usefully compared to the breakdown used in the aforementioned interregional consumption matrices and more generally, can help guide the practical work of regional TSA estimation.

A second observation, useful for the estimation of an expenditure matrix, is the basis for Table 4, where products are classified according to what is called "estimation options". Because demand (expenditure) for certain products can be estimated based on regional (as well as national) supply data. This is obviously possible in the case of characteristic tourism products with a high tourism ratio – i.e., when supply and tourist demand or use are nearly identical. In other words, whether consumed in the place of origin or in the place of destination, their production is intended for tourism.

Table 5. Classification of products according to the type of procedure used to estimate tourism consumption

Product category	Procedure for estimating demand
- Long-haul passenger transport (specific segments) - Travel agencies - Collective accommodation - Vehicle rental	Supply
- Restaurant services	Supply/ demand
- Urban or short-haul passenger transport	Demand
- Private accommodation: rented property	Demand
- Private accommodation: owned dwellings	Supply/ demand (*)
- Other (handicrafts, souvenirs, etc.)	Demand
- Commercial margins	Supply/ demand (*)
- Recreational/cultural/sporting activity services	Supply/ demand

(*) Specific procedures

3.21. There are obvious examples: travel agencies; certain modes and segments of passenger transport (air, long-distance rail, etc.) hotels and other collective accommodation services; and, to a lesser extent, vehicle rentals to visiting tourists. Although the supply of these products may not be 100% geared to the tourist, the tourism ratios are sufficiently high to allow for estimation of regional demand (expenditure) using supply data.

3.22. In other words, for each of those products it would be possible to determine the total for the matrix expenditure column described above by simply using estimations of supply (for instance, information on the sales volume of establishments in the various regions). Additional estimations are naturally required to complete the various cells of the matrix. But for this, one could turn to nonmonetary sources, or a combination of monetary and nonmonetary sources (traveller flows, etc.). For example, in the case of hotels and other collective accommodation establishments, as mentioned in paragraph 3.16, countries like Spain conduct occupancy surveys that can be used to estimate traveller and overnight stay matrices by region of origin and region of destination.

3.23. For other products, regional demand data are obviously needed bars and restaurants; recreational, sporting and cultural activity services; goods; specific modes of transport, etc. Such products can only be estimated on the basis of the specific expenditure sources, since demand for them is not exclusively or even primarily confined to tourists; there is demand for these products among all consumers.

3.24. There are finally some other, very specific products for which estimates require a combination of supply and demand, since they don't fit precisely and exclusively within any of the approaches indicated. This is the case for example of private accommodation (discussed in paragraph 4.3).

3.25. Another very singular case in localizing travel expenditure concerns travel agencies and the services they provide. These are activities that are undergoing a very profound transformation as a result of the Internet and the new technologies. This is true from the perspective of producers, with the development of wholesale and retail agencies on the Web, as well as consumers, who are better able to organize their own travel. In addition to gradual disappearance of the traditional (brick and mortar) retail sector, there are significant problems in apportioning expenditure by such intermediaries to a particular area, given the international and increasingly interrelated character of these enterprises. This compounds the traditional problem – a real challenge for the TSA – of how to deal with "tourism packages" (see paragraph 4.3).

3.26. Flowing from this analysis are several basic recommendations for the estimation of such matrices: the development of nonmonetary flow matrices is a good and almost necessary first step in constructing monetary matrices (although the two remain different and should not be confused); data on tourist expenditure – and the regional matrices – should be disaggregated into a few essential categories of product (the ideal is to focus on the most relevant "characteristic products"), because this will facilitate estimation (for example estimating total demand by way of supply) and help to differentiate in the hypotheses and calculations between expenditure in the place of origin and that in the place of destination. It is obviously advisable from a statistical standpoint that this distinction be clear in the tourist surveys.

3.27. Lastly, although this proposal runs up against statistical deficiencies, since it is considered useful to differentiate expenditures by product, it would also be desirable – because to a certain extent it helps to complement this disaggregation by product – for there to be a certain breakdown in the matrices according to traveller segment or typology.

3.28. At least two dimensions need to be considered: the main purpose of travel, although it would be sufficient to be able to identify the category "business travel"; and another category, with very similar features, which is travel/travellers using owned dwellings as accommodation, especially if the dwelling is owned by the user.

3.4. Methods of estimation for characteristic product and activities in an RTSA

3.4.1. Transport

3.29. When it comes to developing regional accounts, the transport sector poses special problems, and it is necessary to establish criteria for attributing production to a local unit of economic activity (see Annex).

3.30. The criterion proposed by the ESA is to impute the totality of production to the local unit or establishment where the transport equipment is stationed, but allowing for the establishment of top-down procedures (disaggregation of national-level volume) in the case of rail and air transport (ESA 2010: see 13.26):

- "For land transport industries (excluding railways) the production and capital formation should be attached to depots or similar local KAUs [kind-of-activity units] where the equipment is based".

- "For water transport industries the production and mobile equipment should be allocated to the home base of the unit ".

- "For rail and air transport industries top-down methods, breaking down the national aggregates into regions according to suitable indicators, should be used. Compensation of employees should be allocated to the region where the people are employed. The gross operating surplus should be allocated to the regions according to indicators relating to the activity of the train or air routes ".

3.31. This, however, has repercussions when it comes to accounting for regional flows: it means that, except in the case of regional lines, the rail and air transport services consumed by the residents of a region may have been mostly imported from outside it, whereas purchases made by tourists while travelling to (or from) the region do not form part of the regional economy.

3.32. It is possible in practice for information to be available only for units containing several local KAUs dedicated to different activities and/or situated in different regions. In this case, available indicators (for example, remuneration for unsalaried workers or employment by region) should be used to regionalize the figures by branch of activity.

3.4.2. Travel agencies

3.33. Because of the complexity of measuring this important tourism activity (by definition the industry among all others that is most specifically and characteristically specialized in tourism), particular attention is devoted in the methodologies and by the experts to their accounting treatment (see TSA:RMF 2008 and especially Annex 3).

3.34. As many know, one of the big methodological differences between national accounts (the SUT) and the TSA is the treatment of tour operator services, which we can associate with "tourism packages" – TP – (without entering here into their different modalities – see Annex 3 of TSA:RMF

2008). As many also know, the figures recorded for these packages are gross: consumers purchase the entire TP as one product. For the TSA, on the other hand, net figures are required: the TP's components– transport, accommodation, meals, etc. – must be recorded separately, to permit study and analysis of the tourism industries involved.

3.35. At the regional level, the problems are similar to those described in TSA:RMF for international flows: the TP is produced in the region where the tour operator resides, whereas the consumption of tourism services can occur in other regions. In fact, strictly speaking, the only production attributable to the region would be the tour operator's margin for developing and marketing the TP. The TP must therefore be broken down into its component parts, and in this case it will be necessary to adjust flows in and out of the country (imports and exports).

3.36. Here again, the main problems are not conceptual, but statistical. Highly detailed information is needed from the supply as well as demand standpoints in order to complete the estimation (determining the tour operators' margins of intermediation and retail mark-ups, the average prices of the services included, the most usual TP typologies, etc.).

3.4.3. TSA treatment of vacation homes: regional implications

3.37. Today, more than 10 years since the publication of the first version of the TSA international methodology, it can be said that the issue of dwellings or private accommodation for use by tourists represents a work in progress for accounting and statistical experts, no statistical methods or proposals having been developed that are commensurate with the serious challenges involved in measuring this type of "production".

3.38. But the issue is broader than the TSA. It has in fact arisen in recent projects connected initially with national accounts and balance of payments, such as the manual on globalization and national accounts of the United Nations Economic Commission for Europe. The participation of UNWTO in drafting the chapter on tourism dwellings (Libreros and Cañada, 2010) has helped to generate and revitalize interest in the issue, even in the context of the TSA.

3.39. It was argued earlier that the essence of the problems is conceptual in character, stemming from the singular convention in national accounts of treating ownership of a dwelling as production. That is so, but it is also obvious that to apply this convention and to move from conceptual suggestions to numerical measurements requires practical criteria for estimation and specific sources of information.

3.40. So as not to prolong the central part of this paper, a more detailed description has been included in Annex 7. It should only be noted briefly here that the use of private dwellings for tourism can take very different forms, from the perspective of national accounts as well as the TSA, when:

(a)   the tourist uses someone else's dwelling, paying rent;
(b)   the tourist uses someone else's dwelling at no cost (dwelling lent by family or friends free of charge); or
(c)   the tourist uses his own dwelling while on vacation.

3.41. The first case does not in principle present major methodological difficulties. It does, however, pose some statistical problems, given the informal or irregular nature of many of these transactions. Nor does the second case pose any major difficulty in principle, because

transactions that transfer or exchange the use of property between individuals do not need to be measured for accounting purposes (see Eurostat, 2012), although the literature, and even TSA manuals, have been raising the possibility of such measurement (TSA:RMF 2008).

3.42. The real problem that arises has to do with vacation apartments and homes used by their owners, since here, the statistical limitations combine with or predominate over the methodological aspects. As established in the TSA, following traditional national accounts criteria, the production of housing services that are consumed by the owning household are imputed to that household.

3.43. This imputation criterion is applied to any type of accommodation used as housing by the household that owns it, both for dwellings used as usual place of accommodation (the so-called "principal dwellings") and for vacation homes.

3.44. From a regional perspective, vacation homes, i.e., those owned by non-residents, call for special consideration. As indicated in Annex 7, the SNA/ESA features an additional convention under which the mere fact of owning land or buildings in the economic territory is considered sufficient for the owner to be considered a "resident" of the country. If the owner is not a resident, he or she is treated as a notional resident unit and, based on a series of conventions and procedures (Annex 7), the accounting system is closed with the value derived from the rental of dwellings owned by non-residents recorded as a service export.

3.45. A practical implication of these national accounting criteria and conventions, in terms of developing the TSA, is that it cannot be determined from the rent imputed to dwellings occupied by their owners within a specific territory whether the owner is a non-resident or not, since all of this rent will form part of that zone's "tourism-related GDP". Or in other words, the estimation of the production imputed to vacation homes could in principle be done globally, disregarding whether the owner is a resident or not. What happens is that these data are necessary for the estimation of the flows of goods and services vis-à-vis other countries – and in our case regions – and for the calculation of national and regional income, which are clearly affected if a relevant number of dwellings are owned by non-residents.

3.46. This leads us directly to the statistical problems of estimating these services. In the case of vacation homes, to the already significant requirements entailed in the accounting criteria for dwellings in general is added the need for information on the average amount of time they are used. The statistical problems are therefore of the highest order of magnitude and there is no single or definitive solution to them – only different approaches to the phenomenon.

3.47. One such approach is from the supply perspective: only by using census-type sources of information, or information taken from administrative records, can the universe of supply be approximated. But the supply measured will always be potential supply, because what can be captured are non-principal dwellings owned by families. It is highly problematic to determine how many of these there are and to what extent they are used as accommodation (for tourism or other purposes) by their owners or are dwellings maintained as "pure" investment properties.

3.48. Different kinds of solutions to these important statistical challenges need to be considered. The first is to combine and compare the research on supply and demand, together with other statistical measures (Libreros y Cañada, 2010): the inclusion of specific modules in household surveys and censuses; the use of administrative sources (cadastral, tax records) and other "indirect" sources to measure the universe and apply the tourism ratio. For instance, the use of utility company data (electric power, water) as indicative of the actual use of dwellings.

3.49. Second, here again we highlight the need to resort to matrix-type structures or means of contrasting supply and use that try to solve the possible lack of symmetry that may exist between independent estimations in different zones. As a simple example, the estimations currently being made by two countries or two regions that may be linked by this phenomenon (think of one area as "exporter" of these services and the other as "importer") are conducted independently without any possibility of determining how compatible they are. This can significantly affect the data in the balance of payments and national/regional accounts.

3.50. The need to prepare these interregional (or international) matrices (with greater or lesser detail according to the information available) also makes it necessary to identify the approximate or potential nonmonetary flows concerned: in supply, in the "crossed" territorial distribution of "secondary" dwellings according to the owner's principal place of residence; in demand, data on tourism-related use of this type of dwelling. In other words, from the specific perspective of the aforementioned regional tourism consumption matrices, again we see the need to estimate disaggregated matrices for determined categories of products and/or demand segments, in this case, the imputed rental of owned dwellings. This type of matrix should be specific for this product, because it is different in scale and characteristics than other tourism supply/demand segments.

3.5. Statistical sources for tourism and the requirements of an RTSA: background

3.51. Whereas the paragraphs above suggest statistical sources and comment on problems related to specific industries and products, the following briefly cover some of the main statistical aspects of developing an RTSA.

3.52. Much of the recent literature advocates the development of a regional tourism statistics system as the basis for constructing a TSA. This is an ambitious objective. Such a system should indeed be developed, but to introduce, perhaps, a dose of realism reflecting the moment at which this paper is being drafted (autumn 2012, in the midst of an acute economic crisis) a realistic approach should be taken to regional tourism information, allowing space for conventional statistical sources and procedures (either using national sources disaggregated by region or establishing specific regional sources) but also reducing cost, e.g., by drawing from registers or using new technologies to capture household movements and travel (location by means of mobile devices and geo-referencing systems (INRouTe and UNWTO, 2012).

3.53. The two main types of sources required by a TSA are as follows:

- Macroeconomic data and regional accounts.
- Tourism statistics.

3.5.1. Regional accounts as the basis for an RTSA

3.54. For the first type of source, the ideal/optimal approach to information for use in constructing a regional TSA has already been repeatedly mentioned: SUT for that region.

Figure 1. Flowchart illustrating Supply & Use tables
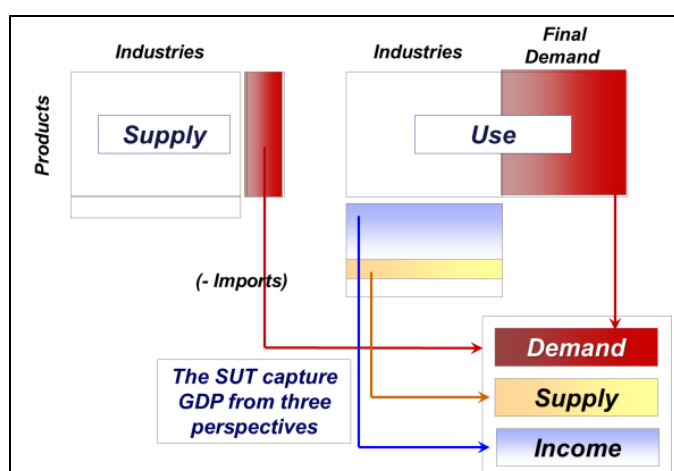
3.55. This dependency is illustrated in Figure 1, showing how supply and use tables are used to obtain GDP (from three perspectives); Figure 2 shows how a TSA can be constructed based on national or regional SUT.

Figure 2. Estimation of an RTSA based on regional supply/use tables
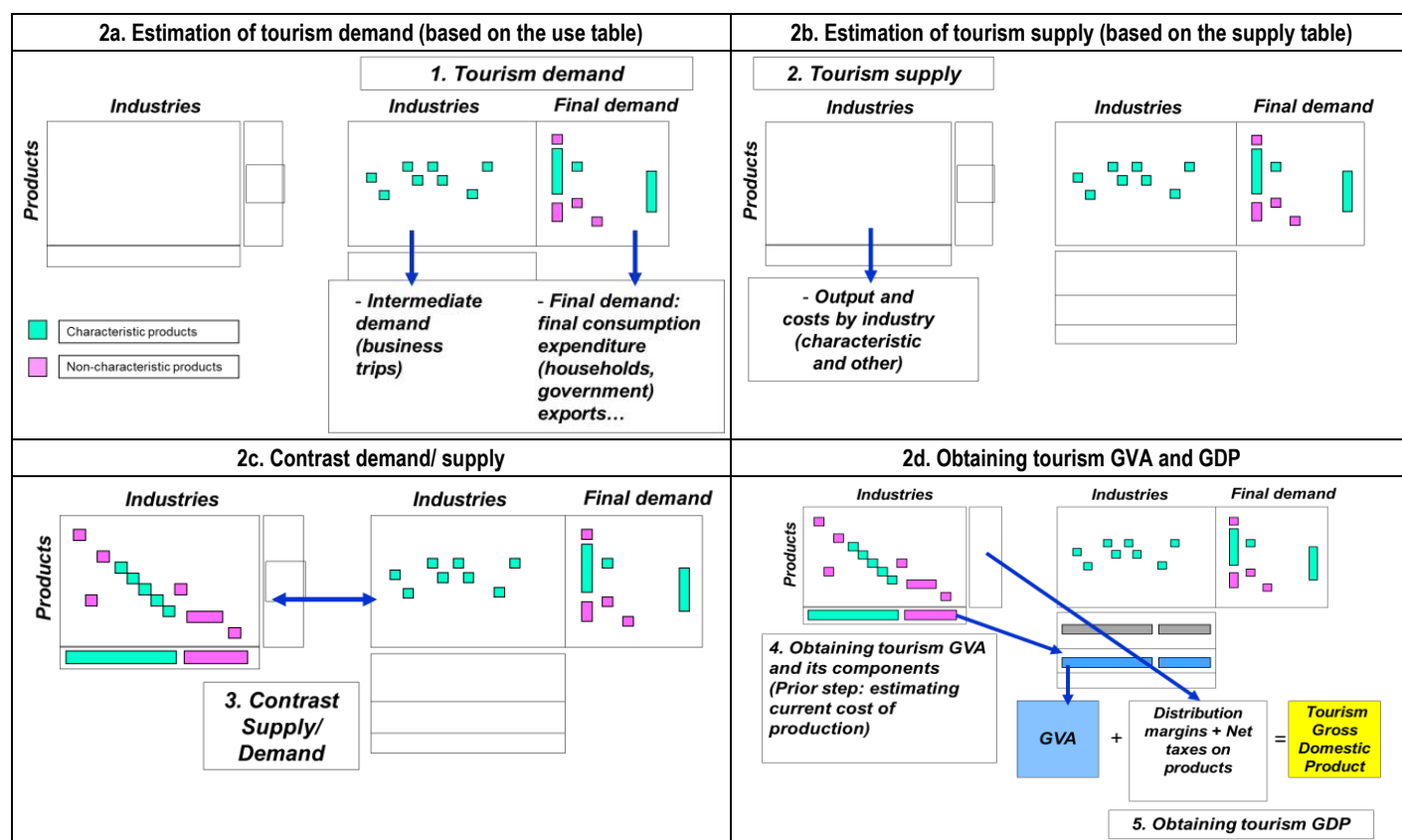
Source: Cañada (2012)

3.56. In terms of second-best alternatives, and with reference to the example of the European Union, the ESA regional accounts and regional system are confined to a limited set of accounting elements, as shown in Table 5 with the EU's system of territorial differentiation, *Nomenclature des Unités Territoriales Statistiques* (NUTS).

3.57. It includes, on the one hand, data by branch of activity, referring to the GVA, the remuneration of unsalaried workers, employment and GFCF.

3.58. It also includes household accounts, comprising the accounts for primary and secondary distribution of income. This subset represents the most highly developed part of the entire regional scheme, although of less interest, paradoxically, from the standpoint of measuring tourism.

Table 6. Regional accounts data that EU countries transmit to EUROSTAT
(under the current ESA 95)

Tables and operations	Level of disaggregation by branch of activity and territorial scope	
	NUTS 2	NUTS 3
a) Regional aggregates by branch of activity:		
1) Gross value added at current prices.	A*10	A*10
2) Remuneration of unsalaried workers (current prices).	A*10	
3) Gross Fixed Capital Formation.	A*10	

4) Employment, in thousands of persons and thousands of hours worked
   - Total
   - Unsalaried
	A*10
	A*10
		A*10
		A*10

b) Regional household accounts.	--	

Source: EU Regulation 715/2010. Official Journal of the European Union 11.8.2010.L 210/1

3.59. These are the required data, included in what is called the "data transmittal program", regulating the transmittal of national and regional account data by countries to the Statistical Office of the European Union.

3.60. It should nonetheless be mentioned that the latest version of the ESA, ESA 2010, which enters into force in the years ahead, apart from featuring an expanded and revised chapter on regional accounts, has given new impetus to regional efforts: a new manual specifically covering regional accounts, as adapted to ESA 2010, is currently being prepared, with completion expected in 2013.

3.61. This impetus will also lead to an expansion of the data countries will be required to prepare (and send to Eurostat as part of the transmittal program) on aspects relevant to tourism. There is the obligation of a greater breakdown by activity of the regional aggregates by branch as well as the inclusion of required data on household final consumption expenditure by region (NUTS 2). Some countries are already compiling these data as permitted by their basic statistical sources (Spain for example).They will soon be required from the entire European Union.

3.5.2. Specific sources of tourism supply and demand

3.62. Together with the macro-accounting data, there is a range of information that needs to be covered as a minimum in the essential variables of the RTSA tables:

- On demand, data on tourism consumption expenditure for each of the basic types of consumption (domestic and inbound) broken down by product.

- On supply, data on the production and commercialization of characteristic activities that require a minimum breakdown: production by type of product; intermediate consumption by product category; personal expenditure; taxes (net of subsidies) paid by production units.

- Employment data for characteristic industries.

3.63. The idea, again, is to combine the national sources, which may include a regional breakdown, with the specifically regional sources (or even subregional, such as destination surveys at specific tourist sites – see the table on sources used in the TSA of the Community of Madrid).

3.64. With respect to the former, we have already seen the example of Europe, where regional statistical rules (NUTS) have been used to define a set of required statistics for the countries and has ultimately led to the configuration within the EU of the start of a basic regional statistical system. In general, the fundamental level for the application of the main policies, and therefore the level at which statistical obligations are most important, is NUTS 2: territories at this level have administrative entities in most of the European countries.

3.65. Without entering here into the details, which can be found on the Eurostat webpage, it is sufficient to mention some examples of how statistical availability affects the fields of greatest interest to an RTSA:

-   With respect to tourism statistics, there is now a rule requiring countries to establish a regional breakdown of their statistics on regulated tourism accommodation establishments. Countries send data to the EU on three types of variables: number of establishments, rooms and bed places at the NUTS 3 level; overnight stays in tourist accommodation establishments at the NUTS 2 level; and arrivals at tourist accommodation establishments at the NUTS 2 level.

-   In the EU's "structural business statistics" the following data is available at the NUTS 2 level: number of establishments; wages and salaries; number of persons employed. The data correspond to the divisional categories of NACE Rev.2 (88 activity categories).

3.66. This basic information is expanded and completed in some countries, such as Spain, which include additional regional breakdowns in all of these surveys. For example, the country's Hotel Accommodation Surveys are designed so as to offer complete information at the level of NUTS 3 for all variables.

3.67. More generally, the TSA of the community of Madrid, for example, could be used as the basis for proposing what sources should be required for an RTSA (see Table 7). This example is sufficiently complete but is also – it must be recognized – extremely unusual, because apart from the wide availability in Spain of national sources with regional breakdowns, a number of specific activities have been initiated for the regional project:

-   A resident household expenditure survey, to determine the behaviour and spending patterns of Madrid residents– within that same territory and on travel to a second residence.

-   A survey taken in tourism areas designed to capture traveller flows and their characteristics in the region's principal tourism areas. In addition to other information, this source, together with the regional expenditure survey, provides a certain level of information and helps to reduce the margin of uncertainty that characterizes the always difficult area of excursionism.

-   The introduction of a travel expenditure module in the survey on the intermediate consumption of regional enterprises (a biannual survey to gather detailed information about this variable for the estimation of regional supply and use tables, which are prepared annually).

3.68. In other words, the efforts were focused on covering fields not covered by other sources but that fundamentally affect demand. With respect to supply, information compiled by the State provides the basis for the TSA supply tables (especially the annual INE survey, as well as specific modules within it referring to travel agencies and accommodation establishments); the breakdown of variables for the sources and the possibility of using micro-data from the surveys for regional enterprises (by virtue of an agreement with the central statistics office, INE), together with regional administrative or registration sources, permits coverage of most of the requirements of the TSA. A similar case is employment, for which national sources (workforce survey, Social Security records) are generally available with a sufficient degree of regional disaggregation so as not to need additional specific sources[6].

Table 7. Main statistics used to develop the Tourism Satellite Account of Madrid

Title	Objectives and characteristics	Territorial scope	Timeframe	Agency
a) Demand				
Survey of visitors in tourism places	Characterization of the visitors to regional places of tourism. Estimation of tourism consumption in the region	Regional	2010, 2011	Statistical Institute of the Community of Madrid
Survey on tourism expenditure (EGATUR)	Estimation of expenditure by non-resident visitors(inbound tourism consumption)	National with regional breakdown	Monthly	IET - INE
Tourist movements at frontiers (FRONTUR)	Quantification and characterization of foreign visitors (inbound tourism consumption).	National with regional breakdown	Monthly.	IET
Survey on tourism expenditure by resident households	Estimation of tourism expenditure by resident households in the Region (domestic and outbound)	Regional	2009	Statistical Institute, Community of Madrid
Survey on family budgets	Distribution of expenditure by resident households	National with regional breakdown	Annual	INE
Tourism travel by residents (FAMILITUR)	Quantification and characterization of travel by Spanish residents.	National with regional breakdown	Monthly	IET
Survey on occupancy of tourist accommodations	Travellers in hotel establishments	National with regional breakdown		INE
Survey on intermediate consumption by businesses in the Community of Madrid	Business travel: Regional survey on intermediate consumption: specific business travel module for companies residing in the region.	Regional	Biannual. Latest: 2010	Statistical Institute, Community of Madrid
b) Supply				
Structural statistics on the services sector: tourism supply	Includes estimates of the economic variables referring to tourism-related activities. (Hotel and similar establishments, restaurants, travel agencies, passenger transport and vehicle rentals)	National with regional breakdown	Annual	INE
Module for travel agency and tour operator services (Annual Survey on Services)	Information on income by type of services supplied (tourism packages, product supplied individually, etc.) and on the composition of packages.	National with regional breakdown	Annual	INE
Specific module for accommodation services (Annual Survey on Services)	Information from hotel enterprises on production by type of service (accommodation, restaurant and related expenditures)	National with regional breakdown	Annual	INE
Hotel price and revenue index	Trends in invoiced pricing	National with regional breakdown	Monthly	INE
Workforce survey (EPA)	Compilation of employment statistics	National with regional breakdown	Quarterly	IET
Social Security records	Contributors by work centre	National with regional breakdown	Monthly	Social Security,
Register of hotel enterprises of the Community of Madrid	Number of enterprises by category	Regional	(Register) Continually updated	Statistical Institute, Community of Madrid
Housing and building census.	Secondary homes by location and frequency of use	National with regional breakdown	Latest available: 2001	

IET: Institute of Tourism Studies (Ministry of Industry and Tourism).
INE: National Institute of Statistics.

---

[6] Other examples of indirect sources are government regulations or labour (collective-bargaining) agreements that regulate contractual modalities and that can be useful in cleaning up estimations as to hours worked and full-time equivalency.

3.69. At any rate, the example of the Community of Madrid cannot be extrapolated for most regions of the world. To the advantages of being a member of the EU, with its basic regional data program, and part of a country like Spain, with a system of tourism information featuring highly detailed regional breakdowns, has been added a major statistical effort for the purposes of the RTSA project, with the implementation of specific statistical projects to fill existing gaps. The resulting table should thus be considered a relatively complete scheme and a kind of basic guide to the types of statistical sources needed to prepare an RTSA.

3.70. In terms of extracting general recommendations, household surveys, such as the "survey on family budgets", are a particularly relevant source for a regional (as well as national) TSA. Most countries have a survey of this kind, providing the raw material for estimating and revising the relative weights of consumer price indices. In addition, a survey on family budgets (EPF) offers two advantages that make it worthy of consideration for possible use in connection with the RTSA: first, to ensure the representative character of the data, the sample sizes are generally quite large in these surveys; and second, they usually have some type of territorial stratification so as to capture possible pricing differences from zone to zone. Ultimately, given the characteristics of such statistics, but also the considerable resources dedicated to them, they appear to be a good point of departure for the measurement of variables such as household tourism expenditure.

Box 3. Survey on family budgets: regional breakdown.

One of the potentially most useful statistical sources for the development of a regional (as well as national) TSA is the "Survey on Family Budgets" (EPF), conducted in the EU. This survey, now conducted in all of the member states, provides annual information on the nature and object of consumer spending. Its basic objective is to calculate weightings for consumer price indices, but the nature of the information gathered makes it an essential source for national and regional accounting, and for the study of various characteristics pertaining to household living conditions.

The EPF is broken down according to the classification of individual consumption by purpose (COICOP)[7]: the purposes are combinations of products that together play a role in satisfying household needs – health, education, housing, etc. Consumer spending refers both to monetary flows from the household to pay for the final consumption of goods and services as well as the value of self-supplied goods for personal consumption, in-kind payments, free or discounted meals, rental payments imputed to the dwelling in which the household resides, etc. Such expenditures are recorded at the time of purchase, whether paid in full or in instalments.

Annual expenditure by resident households in the Community of Madrid on selected items relevant to the TSA

	Thousands of euros
0412 Real rentals (other dwellings)	116,201.7
0731 Rail transport	284,629.1
0732 Road transport	346,964.5
0733 Air transport	406,202.5
0941 Sports and recreational services	670,083.8
0942 Cultural services	890,255.2
0961 All-inclusive holidays	1,469,333.9
1111 Restaurants and cafés	6,681,239.5
1121 Accommodation services	627,817.1

Source: Family Budget Survey. 2010. INE

From a regional standpoint, and while not covered by regulation, most European EPFs do feature some kind of regional breakdown. An exceptional case is the EPF in Spain, which features a complete disaggregation for all variables at the level of NUTS 2. By way of example, the adjacent table shows data for a number of purposes of interest to the field of tourism, corresponding to the EPF for the Region of Madrid in 2010.

It is clear that the EPF and its COICOP classification do not completely satisfy the statistical needs or criteria of a TSA, national or regional. Exceptions include the "all-inclusive holiday" (expenditure on tourism packages). Other tourism expenditure items are combined with household spending on other purposes.

However, completing the central structure of the EPF with a specific module for tourism-related expenditures or some territorial breakdown of purchases (as widely done in Spain[8]) provides extremely useful information for the preparation of a TSA. And there can be no doubt that it constitutes a theoretically ideal framework for the measurement of tourism expenditure by resident households, which is one of the great statistical challenges for the TSA – national as well as regional. The advantage of using the EPF to estimate tourism expenditure is that it provides a complete picture of a household's expenditure, allowing this expenditure to be placed in the context of a household's overall spending.

---

[7] The Classification of Individual Consumption by Purpose (COICOP) is a United Nations nomenclature used to classify and analyze individual consumer spending by households, non-profit institutions serving households and government offices, according to their functions (for details, see http://unstats.un.org/unsd/class/default.asp?Lg=3).

[8] Between 2000 and 2007, the Spanish EPF differentiated the territories where products were acquired, defined taking an approach similar to that used in tourism statistics (distinguishing between usual environment, rest of Spain and abroad). In 2007 a specific module for spending on tourist travel was designed, from which information for the years 2008 and 2009 was taken.

3.71. Apart from these recommendations on the use of EPFs for statistical purposes, it must be stressed that only a household survey or research can provide the information required to complete certain aspects of the RTSA, such as tourism expenditure.

4. Some of the basic conditioning factors for the development of an RTSA: Institutional and strategic issues

4.1. A proposal for an RTSA scheme would not be complete without a reference to aspects beyond the methodological or conceptual realms that normally condition any statistical project: first, the adequacy of resources for carrying out the RTSA; and second, what could be called "institutional" aspects, those resulting from the intervention in TSA projects of different specialized agencies (generally concerned with statistics and tourism policy) at different levels of government (central, regional, local). All of this conditions the implementation strategy.

4.2. With respect to resources, this is in principle such an obvious issue in any statistical project that it should not condition the fundamental objective of this paper, which is to present a rough draft for an RTSA. In writing this document, however, it is very difficult to escape one of the positive lessons of the economic crisis, even now that it has subsided: it is not realistic to think that conventional statistical procedures (various types of surveys) will be continue to be as possible as in the past. These are costly, time-consuming procedures and need to be subjected to prior cost-benefit analysis. This calls for efforts in the field to seek out alternative sources, particularly along the lines pursued by many current initiatives within the INRouTe network (see INRouTe and UNWTO 2012):

   a)   The use of administrative records as a means of obtaining information.

   b)   New forms of gathering information based on new technologies. From information provided by Internet search engines to the use of controls for the reading of vehicle license plates, as well as procedures for monitoring visitors based on mobile devices, etc.

4.3. It is not necessary to enter here into detail on this subject because all of the regional aspects of tourism statistics represent one of the principal concerns and fundamental fields of activity for INRouTe. Records on the meetings held to date and the various documents posted in the INRouTe and UNWTO network [2012] provide a basic description of all the work done in this field.

4.4. It must also be stressed, however, that even with all of these projects based on innovative technologies and the use of administrative records, certain aspects, certain parts of the tourism phenomenon will continue requiring conventional statistical projects. In other words, the surveys are and will be necessary for a series of the basic items. A few examples: no information taken from a country's national records can shed light on various aspects of travel planning (use of agencies, part of the travel that is paid at the place of origin, etc.); more concrete aspects of tourism expenditure, such as consumption in bars and restaurants, require basic information on patterns and amounts of expenditure, which can only be obtained by means of surveys.

4.5. Another type of question or challenge that should be mentioned in our TSA project is the "institutional" issue. That is to say that this paper, like most UNWTO recommendations, advocates an approach to preparing a TSA (national or regional) based on the participation of the different institutions involved in measuring tourism. This joint effort, aside from reducing costs, can improve the TSA, since its results will make it possible to cover a broader spectrum of issues and needs with respect to tourism information.

4.6. At the same time, the participation of different institutions has a counterpart: they require coordination. When one speaks of performing any estimation at subnational levels, these institutional and coordination aspects take on greater importance with the increasing confluence of national, regional, local, and other agencies. Issues pertaining to a strategy for statistical development, which must include institutional issues, are then crucial.

4.7. Among the examples of regional TSAs that have been done in a coordinated and joint manner by central and regional administrations are the case of Wales, whose TSA was the fruit of a multi-institutional team (although it is also an atypical case, since a "national" TSA was not available for reference), as well as various regions of Spain (Andalusia, Canaries, Basque Country). Although all the regional TSA's in Spain have been prepared in a quite independent manner by the institutions of each region (normally regional statistical institutes), there has been conceptual or methodological coordination with the central government. The central statistical office (INE) collaborated with the regional agencies that were developing the TSA – always at their request – either by providing some kind of methodological support at the start of the project or a nonbinding opinion on the preliminary results of a TSA to ensure that it met the international methodological criteria.

4.8. Without such coordination, the risks are obvious: there is no guarantee that the results obtained for the regions will be compatible with each other or with the national TSA. There is also the risk of duplication or inefficient use of resources, for example, if regional and central administrations take on similar statistical projects without coordination.

4.9. One concrete aspect of the proposals in this document can be used to frame the institutional aspects in general: what institution or institutional framework should be entrusted with the development of interregional matrices, which in our opinion are crucial for the consistent estimation of regional TSAs?

4.10. For operational reasons, the development of this type of matrix in cases where a national statistical source that also contains sufficient regional information is used could simply be assigned to the central agencies responsible for those statistics. Taking the case of Spain, the two institutions currently responsible for developing the main sources of tourism statistics – INE and the Ministry of Tourism, through the IET – have, with varying degrees of regularity and detail, prepared a nonmonetary version of this type of matrix. In the case of INE, some of these matrices (origin/destination of travellers staying overnight in tourist accommodations) are even published regularly (monthly) at a quite disaggregated level (origin: NUTS III; destination: NUTS II).

4.11. Naturally, given this paper's advocacy of a system of shared responsibilities, consideration could be given to a system in which regions participate in the development of these matrices, and particularly in the conversion of nonmonetary versions into tourism consumption matrices. These could be the result of a joint effort by the administrations concerned. This would constitute an intermediate approach to national and regional TSA's, developed independently but with a common estimation of (monetary) interregional tourism data.

4.12. At any rate, and as an additional argument in favour of joint action by different administrative levels, there is the fact that when there is no coordinated, homogeneous regional approach to the TSA, private initiative tends to fill the gap, using model-based estimates. This can also be observed in countries with major tourism sectors, such as Spain, where, in the absence of any official regional tourism GDP estimates, private institutions have emerged and developed estimates directly inspired by the TSA but constructed using models, without guarantees as to their statistical soundness. The spread of this practice, even in competition with regions with their own TSA statistical schemes, has created confusion among users and adversely affected the credibility of all tourism data.

4.13. Such institutional complexities can largely be anticipated by designing an RTSA development strategy that takes inter-institutional collaboration into account as a crucial aspect. In that sense, it can be difficult to design a more complete implementation plan than the one recommended by UNWTO (UNWTO, 2005), summarized and supplemented in Frechtling [2008] and included in Annex 6 to this paper.

4.14. Among the other aspects to be highlighted here as especially important is the role given to the central statistical office in these schemes, permitting certain aspects to be safeguarded in any regional approach, such as ensuring compatibility with the TSA:RMF methodology and facilitating the integration of regional tourism estimates into the economic context.

4.15. The strategy must also be realistic, based on such principles as a precise definition of the institutional framework, clearly establishing the distribution of functions and costs among the institutions involved; or the creation of a joint supervisory mechanism for the work, but always avoiding unnecessary bureaucracy.

4.16. Priority must also be given to other common aspects of such efforts, such as the development of a pilot or experimental version of the RTSA. In addition to advancing some initial estimates of the importance of tourism for the economy, such versions can also provide a tool for the analysis and discussion of methodological and statistical problems arising during the estimation process, or for the supervision and direction of future work.

5.   Summing up and general considerations going forward

5.1. In recent decades, despite the lack of a common international methodology, different countries and regions have tried to respond to the challenge of estimating a TSA or similar schemes at the subnational level. Examples include Spain, a country with a particularly vigorous tourism sector, where work has been done to develop TSAs for five of the country's 17 regions, demonstrating the importance given to and interest generated by regional TSAs.

5.2. It is also important to note the heterogeneous character of these experimental efforts, resulting largely from the absence of a common methodological framework for applying TSA:RMF at the regional level.

5.3. This paper includes a proposal for the initial definition and development of a regional TSA. It is necessarily experimental in character but sufficiently complete to cover the essential objectives of a TSA. It suggests some general guidelines for an initial design of the TSA that can provide a basis for a discussion among the institutions, regions and countries involved or interested in developing such methodologies.

5.4. Points to be considered in connection with this initial RTSA exercise include the following:

a)   The scope of transactions proposed for coverage by the regional TSA is confined to a selection of those defined in TSA:RMF 2008. This is intended to keep these initial exercises realistic given the limitations of most regional statistical systems, which prevent the detailed inclusion of all components of the national scheme.

b)   Nevertheless, the set of four basic tables proposed (internal tourism consumption, industry production and operation accounts, tourism supply and consumption, and employment by industry) is sufficiently complete to cover the two basic objectives of a regional TSA:

delineate and present the accounts of the cluster of tourism industries in a fashion that is integrated and consistent with the rest of the economic system; and obtain, by means of aggregates such as GDP, global indicators for the role of tourism in the regional economy.

c) From a methodological point of view, it is particularly important to develop interregional supply/ use matrices for tourism consumption. Such matrices cannot only cover one of the most difficult fields for estimating the RTSA (tourism-related expenditure between regions) but more generally improve the integrated system of regional estimations on the impact of tourism.

d) At the same time, the joint development of these matrices by different administrations provides a way to reconcile the national interest with diverse regional opinions. Such a joint effort would improve both regional and national TSA's in terms of compatibility and comparability.

e) It is also important to explore alternative means of obtaining demand estimates based on supply data (e.g., from travel agencies, accommodation establishments, transport companies, etc.), as a practical consideration, given the major deficiencies that characterize statistics on demand.

f) The statistical database for an RTSA rests on two fundamental pillars: regional SUT (or a partial set of regional accounts) to serve as statistical reference points and help square RTSA estimates from a macroeconomic perspective; and the system of tourism statistics at regional level, used to move up from accounting data to the estimation of a TSA. In that sense, the paper provides examples of the information structure used by particular regions (Community of Madrid) that can serve as reference in designing a complete statistical system.

g) From the standpoint of a strategy for developing a TSA, this paper agrees with and fully supports the implementation of an RTSA designed by UNWTO in 2005 (UNWTO, 2005), which consistently combines the technical and institutional aspects (including the role of central and regional administrations).

5.5. In terms of future expansion and extension of this framework, the following points should be considered:

a) The first and most obvious is the need to complete at regional level the remaining tables and details proposed in TSA:RMF, such as the breakdown of consumption by product or the analysis and measurement of such variables as intermediate consumption, business travel and consumption by public administrations.

b) Tourism ratios by product and/or industry. As indicated, this is an issue that transcends the RTSA, given the gaps in basic information found even among national statistical systems. This could be a priority area for research in the TSA and RTSA programs (e.g.-by expanding visitor surveys from a "product consumed" perspective to the perspective of the industry supplying the product to the traveller, as indicated by Jones (2008).

c) Rent imputed to vacation homes. Despite the importance of the phenomenon (both domestically and internationally, this is an area that still needs to be addressed consistently, even in the TSA but especially in the RTSA, given its major implications for some regions.

d) The possibility of incorporating certain sub regional breakdowns. Indeed, as indicated in TSA:RMF 2008, an RTSA could provide a framework for identifying "specific and differentiating situations for large subregional territories". This links up naturally with a priority of future UNWTO work programs and INRouTe activities, that of approaching tourism from the standpoint of local or subregional spaces.

Bibliography

Aurioles, J. (2002), *La elaboración de la cuenta satélite regional del turismo*, Junta de Andalucía.

Barber-Dueck, C. & Kotsovos, D. (2003), *The Provincial and Territorial Tourism Satellite Accounts for Canada 1998* (Online), available: http://www.statcan.ca/.

Braendvang, A., Dybedal, P., Johansen, S. & Sorensen, K. (2001), *Regional Satellite Accounts for Norway*, 41st Congress of the European Regional Science Association, Zagreb, 2001.

Cañada, A. (2009), *Regional-CST: potential and problems in developing sub-national TSA*, ONS conference on Tourism Satellite Accounts: Inputs, Processes, and Actors, ONS, London, 21-22 Mayo 2009.

Cañada, A. (2010), *Extensiones de la Cuenta Satélite del Turismo: Matrices de gasto, viviendas turísticas y otros desarrollos recientes en el ámbito regional*, Cuadernos de Economía, 33- 91, 2010, pp.95-126.

Commission of the European Communities Organization for Economic Cooperation and Development, World Tourism Organization, United Nations (2008),*Tourism Satellite Account: Recommended Methodological Framework 2008* (Luxembourg, Madrid, New York, Paris) (Online) available: http://unstats.un.org/unsd/tradeserv/tourism/manual.html.

Commission of the European Communities, International Monetary Fund, Organization for Economic Cooperation and Development, United Nations and World Bank, *System of National Accounts, 2008* (Brussels/Luxembourg, New York, Paris, Washington, D.C., 2009) (Online), available: http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf.

European Commission (2010), *Annex A. Chapter 13: Regional Accounts*, (Online), available: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SPLIT_COM:2010:0774(63):FIN:EN:PDF.

Eurostat (1995), *Regional Accounts Methods Gross value-added and gross fixed capital formation by activity,* Luxembourg.

Eurostat (1996), *Regional Accounts Methods. Household accounts,* Luxembourg.

Eurostat (2009), *TSA in the European Union*, Luxembourg.

Eurostat (2010) *European Regional and Urban Statistics*. Reference Guide, Luxembourg.

Frechtling, D. (2008), *Measurement and analysis of tourism economic contributions for subnational regions through the Tourism Satellite Account*, (Document presented at the International Conference on Measuring Tourism Economic Contribution at Sub-National Levels, "Knowledge as Value Advantage for Tourism Destinations", 29 - 31 October 2008, Málaga, Spain) (Online), available: http://statistics.unwto.org/en/event/malaga.

Frechtling, D. (2011), *Exploring the Full Economic Impact of Tourism for Policy Making*, (Document presented at the 3rdT.20 Ministers Meeting, France, October 2011) (Online), available: http://t20.unwto.org/sites/all/files/pdf/unwto_paper_t20_france.pdf.

Frechtling, D. (2013), *The Economic Impact of Tourism: Overview and Examples of Macroeconomic Analysis*, UNWTO Statistics and TSA Issue Paper Series STSA/IP/2013/03 (Online), available: http://statistics.unwto.org/en/content/papers.

INE (Subdirección General de Cuentas Nacionales) (1999), *Contabilidad Regional de España. Base 1995*, Boletín Trimestral de Coyuntura, 14, 1999.

Instituto de Estadística - C. Madrid (2011), *Cuenta Satélite del Turismo de la Comunidad de Madrid: metodología y primeras estimaciones* (Online), available: http://www.madrid.org/iestadis/fijas/estructu/economicas/contabilidad/descarga/csatturme.pdf.

International Network on Regional Economics, Mobility and Tourism and World Tourism Organization (2012), *A Closer Look at Tourism: Sub-national Measurement and Analysis – Towards a Set of UNWTO Guidelines*, (Online), available: http://www.e-unwto.org/content/m62755/.

Jones, C. (2008), *Tourism's Economic contribution at Sub-national Level. The Regional TSA: Complements and Extensions*,(Document presented at the International Conference on Measuring Tourism Economic Contribution at Sub-National Levels, "Knowledge as Value Advantage for Tourism Destinations", 29 - 31 October 2008, Málaga, Spain), (Online), available: http://statistics.unwto.org/en/event/malaga.

Jones, C. (2009), *Assessing the Impact of Tourism in Regions: Towards a Holistic Analysis?* Regional Association 2009 Conference, Belgium (Online), available: http://www.regional-studies-assoc.ac.uk/events/2009/apr-leuven/papers/Jones.pdf.

Jones, C., Bryan, J., Munday, M. & Roberts, A. (2010), *The Tourism Satellite Account for Wales 2007* (Online), available: http://wales.gov.uk/docs/drah/publications/Tourism/100715tsajulyappeng.pdf.

Konttinen, J. (2006), *Regional Tourism Satellite Account in Finland*, 46th Congress of the European Regional Science Association, Volos.

Libreros, M. and Cañada, A. (2010), *Vacation home ownership in a globalized World*, Working paper, UNWTO, Madrid.

Rütter, H. and A. Berwert (1999), *A regional approach for tourism satellite accounts and links to the National Account*, Tourism Economics, 5 (4), pp. 353-381.

United Nations and World Tourism Organization (2008), *International Recommendations for Tourism Statistics 2008 (IRTS 2008)*, New York, Madrid (Online), available: http://unstats.un.org/unsd/tradeserv/tourism/manual.html

Van Ho, T., et al.(2008), *Development of Regional Tourism Satellite Account: A case study from Australia*, (Document presented at the International Conference on Measuring Tourism Economic Contribution at Sub-National Levels, "Knowledge as Value Advantage for Tourism Destinations", 29 - 31 October 2008, Málaga, Spain) (Online), available: http://statistics.unwto.org/en/event/malaga.

Wall,C., MacFeely, S. (2012), *Ireland case study: Measuring & Analysing Regional Tourism*, (Document presented at the INRouTe 1st Seminar on Regional Tourism: setting the focus, Venice, Italy, 5-6 July 2012).

Weekers, K. (2012), *TSA. Flemish and Brussels-Capital Region 2008*, Research Centre of the Government of Flanders (Online), available: http://www.toerismevlaanderen.be.

World Tourism Organization (2005), *Adapting the National Tourism Satellite Account (TSA) Project to subnational levels: A discussion paper*, UNWTO, Madrid.

World Tourism Organization (2008), *Developing Tourism Statistics at The Sub-National Level: The Measurement of Flows of Trips and Visitors* (Document presented at the International Conference on Measuring Tourism Economic Contribution at Sub-National Levels, "Knowledge as Value Advantage for Tourism Destinations", 29 - 31 October 2008, Málaga, Spain), (Online), available: http://statistics.unwto.org/en/event/malaga.

Zhang, J., (2005), *Documentation on Regional Tourism Satellite Accounts in Denmark* (Online), available: www.akf.dk/udgivelser/2005/pdf/rtsa.pdf.

Annex 1. Regional approaches to the TSA (*)

Country/ Region	*Period of reference*	**Methodological features**
Australia/ Multiregional	Annual estimates since 1996. Latest available: 2010	Regionalization of the national TSA.
Belgium/ Flanders- Brussels region	2008	Regional estimation of the TSA.
Canada/ Multiregional	Annual estimates since 1996	Regionalization of the national TSA.
Denmark / Multiregional	Annual estimates since 2000	Regionalization of the national TSA.
Spain/ Andalusia	Prepared every five years, starting in 2000.	Regional estimation of the TSA.
Spain/ Canaries	2002	Regional estimation of the TSA.
Spain/ Castile and Leon	Annual estimates since 2000. Latest available: 2009	Regional estimation of the TSA.
Spain/ Basque country	Annual estimates since 2000. Latest available: 2010	Regional estimation of the TSA.
Spain/ Community of Madrid	RTSA Series for the period 2006-2009	Regional estimation of the TSA.
Finland/ Multiregional	Annual estimates since 2002. Latest available: 2010	Regionalization of the national TSA
Norway / Multiregional	Regional estimates of the TSA have been done for 1997 and 2007.	Regionalization of the national TSA
United Kingdom/Wales	A continuous project initiated in 2000. Latest available: 2007.	Regional estimation of the TSA.

(*) This list is not intended to be exhaustive, but as a sample of representative efforts.

Annex 2. Regional accounts and the TSA: Territory, units and operations at regional level

This Annex summarizes some of the basic concepts used in national and regional accounts according to the current manuals (SNA 2008 and ESA 2010 - see note 2) as additional material for reference in connection with the paper, and referring in particular to the definition of economic territory, units and accounting operations at regional level.

National accounts are prepared on the basis of economic activities conducted in the "economic" territory of a country and the resident units in that country for which the data are gathered: for example, an enterprise is considered to reside in a territory if it owns an office or establishment in that territory dedicated to a production activity (or as referred to in accounting systems, if it has a "centre of economic interest" in the territory).

SNA/ESA distinguishes between two types of units. The first is the local kind-of-activity unit (KAU) or establishment that is part of an enterprise that produces goods and services dedicated to an identifiable principal activity, in a place identified topographically. The second type of unit is the institutional unit, the enterprise, for analysis of income and capital flows, financial transactions, balances, etc.

In the context of regional accounts, three types of institutional unit need to be considered (SNA, Chapter 18):

a. There are (uni) regional units, the centre of predominant economic interest of each of which is one region and most of their activities take place in this region […].

b. There are multiregional units, the centre of predominant economic interest of each of which is in more than one region but does not relate to the country overall […]

c. A small number of units are national units, which means that their centres of predominant economic interest are not located geographically even in the sense of multiregional location. This is usually the case of central government and may be the case for a small number of corporations (probably public), such as the national railway corporation or the national electricity corporation (in general, all network industries).

Table A.1 shows the categories of institutional unit, indicating the essential regionalization problems encountered and such solutions as may have been identified.

Table A.1. Types of institutional unit and prospects for regionalization, according to SNA 2008 and ESA 2010

	Characteristic cases and/or examples	Possibilities for regionalization?	Solutions (conventions)
1) Uni-regional (the centre of economic interest is located in a single region)	Households; corporations whose local KAUs are all located in the same region; local and regional administrations	(By definition regionalization is possible)	-----
2) Multi-regional(the centre of economic interest is located in more than one region)	Corporations with local KAUs in different regions and particular cases (see Table 9); Central administration or NPISH units distributed across different regions.	Regionalization is only applicable to production activities. It is not applicable to distribution or financial operations.	See Table A.2
3) cannot be assigned to a region	3.1) National units: units of the central administration cannot be regionalized.	Only applicable to specific operations certain distribution or	There is no body of established and accepted criteria, although

	Characteristic cases and/or examples	Possibilities for regionalization?	Solutions (conventions)
		financial operations are excluded. Example: the impossibility of regionalizing interest on the public debt.	there are different types of approaches to the regionalization of central government expenditure.
	3.2) Special territorial enclaves: a country's territorial waters and continental shelf; embassies, consulates and military bases; resource deposits in international waters, etc.	Cannot be regionalized	The operations are not regionalized and are notionally classified as "quasi-regions": supranational (SNA 2008) or "extra-regional" (ESA 2010).

One of the first matters to be resolved (see Table A.2, item 3) is that not all of a country's national territory can be assigned to one region or another, as in the case of territorial waters and the continental shelf; territorial enclaves like embassies, consulates and military bases; resource deposits in international waters, etc. For those cases, countries that regionalize their accounts follow the convention of not assigning such areas to a particular region but treating them as quasi-regions (to use the ESA extra- regional nomenclature). In any case, the importance of this type of problem and the size of such enclaves is small in many countries and does not irremediably distort the regional estimates.

In the other two cases covered in Table A.2, the territorial assignment of transactions by uni-regional units poses no conceptual problems. The greater complexity lies in assigning the units of multiregional enterprises – i.e. those operating in more than one region – to one region in particular. This is the case of State or central government entities with multiple locations in several regions, such as transport carriers (carrying goods and passengers between different regions) or energy supply installations. It is not viable in such cases to assign all accounting operations (such as distribution operations or financial transactions) to particular territories, so it is not possible, strictly speaking, to construct a complete system of accounts for a region.

The aspects covered in Table A.2 provide a general reference, but repercussions for the measurement of tourism at regional level also need to be examined. The reality is that the most important cases refer to multiregional enterprises discussed below. It should merely be noted here that the measurement of tourism in an RTSA can be affected by these criteria in the case of certain activities and government units. Indeed, the issue of enclaves and the other units included in the extra-regional category appear somewhat removed from tourism. However, the singular administrative structure in certain countries has implications in this regard (in Spain, for instance, regional governments have such enclaves outside of Spanish territory, as tourism offices) (Aurioles, 2000).

Table A.2 shows some of the problems and singular cases referring to units belonging to multiregional enterprises.

Table A.2. Regionalization of production operations in the case of certain multiregional (institutional) units and their treatment in regional accounts according to SNA 2008 and ESA 2010

Unit	Regionalization problems	Treatment
a) Activities not generating "significant" employment in the region: production takes place in one region and management of the enterprise in another.	a1) Relevant activities, such as wind generators, oil and gas extraction, communication networks and antennas and Internet, unstaffed service stations.	a1) Part of the output is apportioned to the region. Problem: indicators for performing this apportionment.
	a2) Other, less relevant activities	a2) Not treated as differentiated local KAUs. Production is apportioned to the region of the local unit responsible for managing it.
b) Activity with no fixed location performed by enterprises of other regions.	b1) Projects of one year or more in duration (major infrastructure) supervised through a local office. b2) Projects of less than one year's duration supervised through a local office.	b1) The production activity is recorded as a local KAU in the region where the project is conducted. b2) Apportioned to the region where the parent company resides.
c) Units dedicated to an enterprise's auxiliary activities (auxiliary units) located in regions different from those of the enterprise's other establishments, which they serve.	They are only recorded if they are "statistically observable" (there are separate accounts or information on the production activity concerned) and are also recorded in the national accounts.	Recorded as a local KAU in the region where they are located and classified according to the principle activity they perform.

Among the aspects reflected in the table is the treatment of "auxiliary units": offices or establishments conducting activities exclusively for the enterprise to which they legally belong, such as central headquarters, warehouses, etc. Auxiliary units may often be located in regions different from those in which the production takes place.

In this connection, attention should be drawn to a significant change in the latest revision of the SNA, SNA 2008 (and its adaptation to the EU, as ESA 2010): these units are recorded as differentiated production units if there is statistical information available on the unit that permits its activity to be measured, provided that it is recorded in both national and regional accounts. These units need to be classified according to their principal activity. An enterprise's "central headquarters", for example, would be included as "business services" (provided to that enterprise).

This represents a radical change relative to earlier systems, in which the central headquarters of a marine transport enterprise was classified as a production unit for this type of service. It can significantly affect the territorial distribution of transport activities, and thus their measurement in regional accounts.

Another significant point is that units "not generating significant employment" (in the SNA/ESA, significant is understood to mean "the equivalent of one person working regularly on a half-time basis for one year"). There are activities that do not require significant amounts of labour, because the production is highly automated. In the case of tourism, this can affect, albeit quite marginally, certain estimates of regional supply, as in the case of service stations or highway tollbooths not generating continual or relevant levels of employment.

Annex 3. The TSA:RMF Tables

| Title	Description
Table 1. Inbound tourism expenditure	Made by visitors (tourists, excursionists).
Table 2. Domestic tourism expenditure	By product, class of visitor (tourists, excursionists) and type of travel (domestic, outbound)
Table 3 Outbound tourism expenditure	By product and class of visitor (tourists, excursionists)
Table 4 Internal tourism consumption	By product and other component of consumption: Internal tourism expenditure (sum of inbound tourism expenditure and domestic tourism expenditure); other components of tourism consumption.
Table 5 Production accounts	Of tourism industries and other industries. Production data by product; intermediate consumption by major product category.
Table 6 Domestic supply and internal tourism consumption	- Supply by product (characteristic and non-characteristic): Production matrix by product and industry, with a breakdown for tourism-related and non-tourism-related; imports; taxes net of subsidies; commercial and transport margins. - Demand: internal tourism consumption, by product. - Consumption/supply tourism ratios by product.
Table 7 Employment in tourism industries:	Number of establishments; information on employment, by employment status (salaried or unsalaried) and sex (men, women). Three employment variables: jobs; hours worked, full-time job equivalents.
Table 8 Gross fixed capital formation	By product and industry: tourism industries and other industries
Table 9 Tourism collective consumption	By product and government level (national, regional, local)
Table 10 Non-monetary indicators	A. Number of trips and overnight stays, by form of tourism (inbound tourism, domestic tourism, outbound tourism) and class of visitor (tourists, excursionists) B. Inbound tourism: number of arrivals and overnight stays, by means of transport C. Number of establishments and capacity by type of accommodation: accommodation per ISIC 55; real estate activities per ISIC 68. D. Number of establishments in the tourism industries, classified according to the average number of jobs, by employment intervals.

Annex 4. TSA:RMF classifications of characteristic activities and products

Characteristic industries	Characteristic products

1. Accommodation for visitors
   1.a. Accommodation for visitors other than 1.b
   1.b. Accommodation associated with vacation home ownership
2. Food- and beverage-serving industry
3. Railway passenger transport
4. Road passenger transport
5. Water passenger transport
6. Air passenger transport
7. Transport equipment rental
8. Travel agencies and other reservation services industry
9. Cultural industry
10. Sports and recreational industry
	1. Accommodation services for visitors
	   1.a. Accommodation serv. for visitors other than 1b
	   1.b. Accommodation services associated with vacation home ownership
	2. Food-and beverage-serving services
	3. Railway passenger transport services
	4. Road passenger transport services
	5. Water passenger transport services
	6. Air passenger transport services
	7. Transport equipment rental services
	8. Travel agencies and other reservation services
	9. Cultural services
	10. Sports and recreational services

11. Retail trade of country-specific tourism characteristic products	
12. Other country-specific tourism characteristic industries	11. Country-specific tourism characteristic goods 12. Country-specific tourism characteristic services

Annex 5. Tourism demand of variables in a TSA and their relationship with national/regional accounts

The linkage between the fundamental demand variables of a TSA (i.e., those that make up tourism consumption) and the variables recorded in national and regional accounts is illustrated in Figure A.1. This illustration is useful because it shows the connection between information provided in the accounts, specifically in the, Supply & Use tables (SUT) and the content or definition of variables in a TSA.

Figure A.1. Tourism demand variables in a TSA and their connection with national accounts, based on the Use table

(*) Includes meal allowances paid by enterprises to their employees during travel.
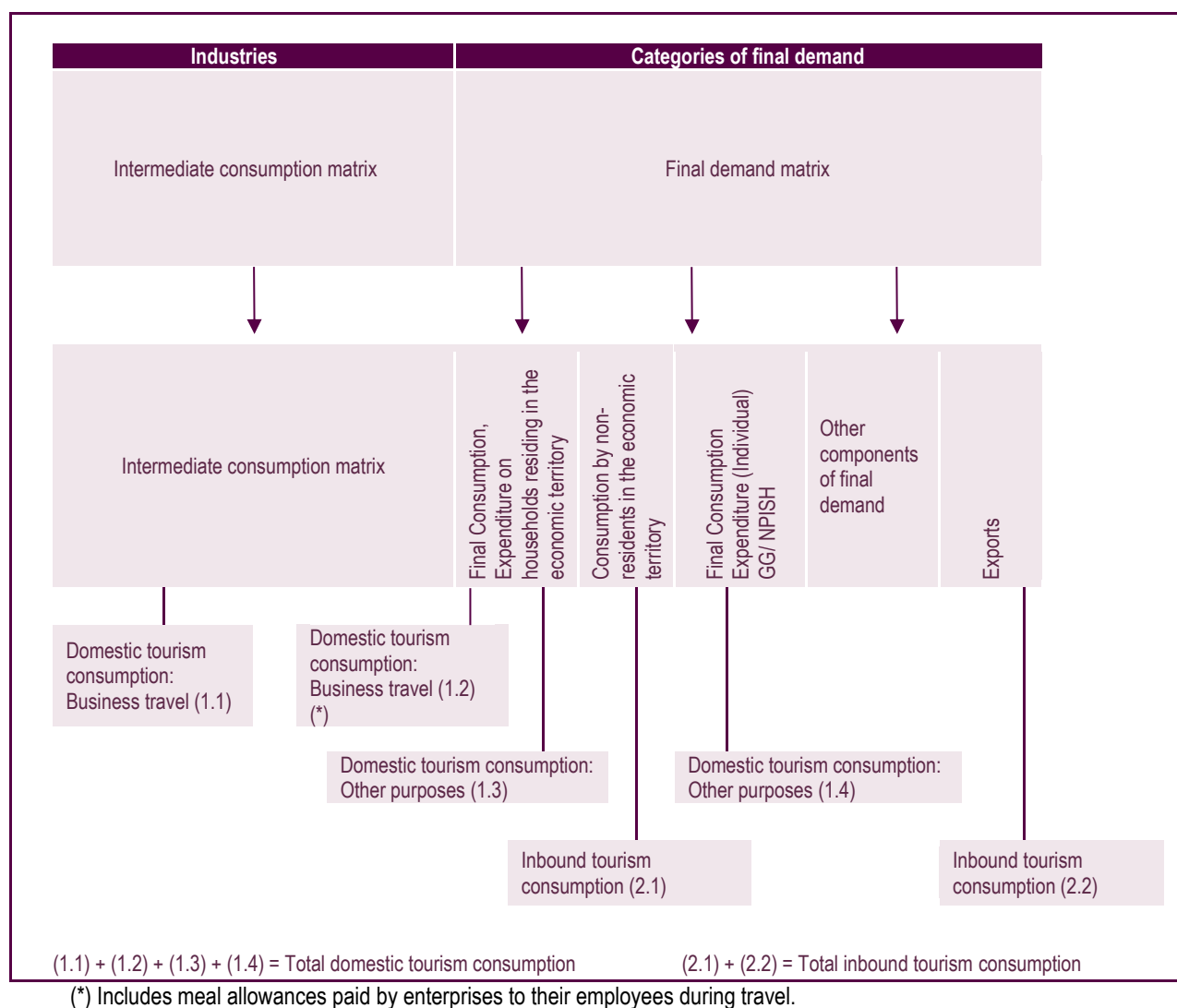
The figure shows the "tourism consumption" components and the national accounts items that define them: household final consumption expenditure; consumption by non-residents; GG/NPISH individual final consumption expenditure; and exports. It should be noted that consumption by non-residents appears here disaggregated by product, although in the SUT it is implicit in household consumption expenditure and appears in aggregate form, together with "consumption by residents in the rest of the world", as an adjustment item that permits total "national" consumption expenditure to be reflected (Cañada, 2010).

In terms of domestic consumption, in differentiating between work-related travel ("business travel" in the TSA terminology) and other travel, the intermediate consumption of resident enterprises by their personnel (basically transport and accommodation expenditure) is included as "business travel".

In the illustration, living or "subsistence" expenses that employees receive while on business travel have been included: as "cash remuneration" they form part of "final household consumer spending". It is a matter of debate whether or not this expenditure on tourism-related consumption should be included (it is argued that persons must incur such expenditure, whether they travel or not). It was decided to include them here because, in the author's opinion, it is often better to think in terms of realistic statistical approaches than a rigorous application of concepts. Spending by "business" travellers in restaurants in a particular region or country form part of what that zone earns as tourism-related expenditure; and statistically, it is difficult to differentiate whether they are of one nature or another.

"Domestic tourism consumption" consists of expenditure related to domestic tourism-, that is, travel by residents of a territory within that territory and expenditure related to travel in other zones, but materializing in the purchase of services in the territory of residence.

"Inbound tourism consumption" includes:

- "Consumption by non-residents in the economic territory". This rubric would be included in the TSA but with certain items excluded: seasonal and frontier worker income.

- Other service exports that reflect services provided by resident units to non-resident visitors (such as when a non-resident tourist arrives in a territory using a resident transport company).

In an analogous way, for outbound tourism consumption, imports include "consumption by residents in the rest of the world", but also other imports related to tourist travel (basically transport).

Annex 6. Proposed action plan for the implementation of a regional TSA

	Action proposed	Objective
(i)	Establishment of an inter-institutional platform	Responsibility for monitoring and oversight of the process
(ii)	Establishment of a technical committee of regional executing units	Technical supervision of the process and training of regional technical teams
(iii)	Evaluation, from a regional and global perspective, of the tourism statistics and national accounts available and analysis of their quality and consistency	Updated inventory of the statistical resources available at national and regional levels
(iv)	Formulation of a joint research program on tourism statistics, with a view to their regionalization	Harmonization of methodologies and definition based on the TSA's anticipated information requirements with respect to tourism supply and demand
(v)	Analysis of the program's terms of reference as defined in (iv) and incorporation of adjustments as appropriate. Development of the final program	Exchange of technical views and consensus building
(vi)	Familiarization of the national and regional technical teams with the general project framework defined in (iv) with a view to structured implementation	Guidelines for structured implementation of the statistical research program
(vii)	Determination of characteristics and application of specific modules on trends and seasonality in interregional /national tourism	Specific module applicable at regional level
(viii)	Specification of characteristics and application of specific modules on national and regional employment trends, full- and part-time jobs, productivity, etc.	Specific module applicable at regional level
(ix)	Specification of characteristics and application of specific modules for the determination of internal tourism-related expenditure	Specific module applicable at regional level
(x)	Regional training on statistics and the TSA	Application to the Regional Platform
(xi)	Analysis of the quality of the statistical information gathered and construction of regional databases	Improvement of the statistical information gathered
(xii)	Centralization of regional information and construction of a national database. Specification of regional indicators	Utilization of the statistical information gathered and definition of a preliminary set of indicators
(xiii)	Decision on a set of basic regional indicators for the estimation of regional TSAs. Analysis of consistency and quality. Participation of executing units and institutions responsible for regional statistical research	Agreed specification of indicators for regional disaggregation of the TSA. Interregional/national implications
(xiv)	Preparation of a set of specific regional and national indicators for tourism-related investments	Gathering of data on investment
(xv)	Decentralization of the information: construction of TSA at regional level	Estimation of preliminary accounts
(xvi)	Technical consistency and compatibility between the TSA and RTSA: evaluation and test for consistency	Revision and improvement of preliminary accounts
(xvii)	Technical workshop prior to dissemination of the results: national level	National agreements
(xviii)	Publication of results	Final general framework for the project and recording of technical observations by external experts

Source: UNWTO (2005)

Annex 7. Production imputed to secondary dwellings used for tourism

As established in the TSA, following the traditional national accounts criteria, the production of housing services is imputed to households owning dwellings in which they live, and such households are considered to consume those services. An "imputed" or notional value for that production is calculated, using procedures discussed below, and included as expenditure within final household consumption. And to close the accounting circuit, the income obtained from this "sale to oneself" (after discounting production costs) is considered primary household income ("net operating surplus"), and is used in turn to consume, or "acquire" the services being sold.

This imputation criterion applies to any type of accommodation used as a dwelling by the household to which it belongs, those used as usual place of residence ("principal dwellings") as well as those used as vacation homes.

The next problem is how to assess the value of that production. The criterion recommended in SNA/ESA is relatively simple: the production "is measured according to its estimated rental value, taking into consideration elements such as location, facilities in the area, size and quality of the dwelling" (ESA 95, para. 3.64).

This criterion is easy to formulate but difficult to put in practice, so different procedures are used. On the one hand is the traditional criterion of "self-assessment": (household) surveys ask the owners of dwellings to indicate what they estimate people would pay for an equivalent dwelling. The degree of implicit subjectivity in this method is obvious, and generally results in overestimation when imputing the rent. Consequently, since SNA 93/ ESA 95, stratification has been the method predominantly used (and is even mandatory in the European Union: European Commission Regulation (EC) No 1722/2005).

It consists of distributing the total stock of housing among different strata by housing typology (surface area, installations, number of rooms, etc., characteristics of the building if applicable, location, year built, etc.). These typologies are associated with a precise number of dwellings in each stratum, permitting values to be assigned to them. Stratification of the stock of housing is based on a series of parameters obtained from household censuses. It is also necessary to obtain data on actual rent paid for each stratum of dwellings, which is what finally makes it possible to assign a monetary value to each category or stratum of dwellings.

These are general criteria for all types of dwellings. In principle, it appears possible to apply the same conventions to vacation homes, but obviously introducing a criterion based on time of use, since it would not be logical to assign them the same value as a dwelling that is a usual place of residence.

A special case to be considered is that of non-residents owning tourist or vacation homes. In SNA/ESA, aside from applying the criteria mentioned earlier for imputing a notional production of accommodation services, there is an additional convention for the treatment of these dwellings: the mere act of owning land or buildings in the economic territory is considered sufficient for the owner to be considered a "resident" of the country. If the owner is not a resident, he or she is treated like one *notionally* in his capacity as owner of the dwelling. The imputed rental (self-) payments and income for the dwellings are considered to be paid to the notional resident unit who in turn supposedly transfers the income from the property to the actual non-resident owner. In other words, the net operating surplus is recorded as primary income paid to the rest of the world. With this income, the non-resident "acquires" (notionally) the services generated by the use of his or her own dwelling in another country or region. Therefore, the rental value of dwellings belonging to non-residents is recorded as an export of services.

The World Tourism Organization, a United Nations specialized agency, is the leading international organization with the decisive and central role in promoting the development of responsible, sustainable and universally accessible tourism. It serves as a global forum for tourism policy issues and a practical source of tourism know-how. Its membership includes 156 countries, 6 territories, 2 permanent observers and over 400 Affiliate Members.

World Tourism Organization