

# METHODOLOGY OF THE REGIONAL TOURISM SATELLITE ACCOUNT FOR POLAND – CONCEPT AND FEASIBILITY STUDY

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ABSTRACT The aim of the paper is to present the proposal of the methodology of the regional tourism satellite account (RTSA) for Poland. It covers the following issues: the background for the methodology development, basic assumptions on which it has been based, characteristics of potential sources of data and estimation procedures, listing of risks involved in the RTSA compilation that entail need for some contingency solutions. The proposed methodology is an attempt to reconcile the need for accurate and timely measurement of tourism performance in regions with the availability of data and constrains set by the system of regional accounts implemented in Poland.

## Introduction

Due to the growing importance of tourism to regional economies, local governments and authorities adopt active tourism development policies. But effective policy involves reliable tools for measurement of its outcomes and impacts. Standard statistical reporting systems are insufficient since they fail to provide a full picture of tourism phenomenon which goes across many economic activities (Frechtling, 2013) and is mainly service based and

temporal. International institutions developed a methodology that allows to overcome the problem at the national level, i.e. the Tourism Satellite Account (TSA) (UNWTO, OECD, EUROSTAT, 2000; UNWTO, OECD, EUROSTAT, 2010). It has been implemented in a number of countries, including Poland. Following the TSA, there was an idea to prepare a similar methodology for regions. Some countries have attempted to develop and then apply it nevertheless, such attempts are not official and vary widely (Dwyer et al., 2010: 253–265; Konttinen, 2006). The approach to compilation of the regional tourism account (RTSA) in particular countries is influenced by a number of factors, namely: the administration structure of the country and its size, the body responsible for the compilation, recognition of significance of tourism, system of statistical reporting and national accounts.

The purpose of the paper is to develop a proposal of the methodology based on the TSA concept that would allow measurement of tourism contribution to regional economies in Poland. Solutions presented in this study are original proposals adapted to the Polish conditions. They have been based on the review of theoretical proposals, cases from other countries and systematic examination of sources of data and institutional context for compilation of the RTSA for Polish regions. The paper consists of 6 parts and covers the following issues: literature review, the background for the methodology development, basic assumptions on which it has been based, characteristics of potential sources of data and estimation procedures, listing of risks involved in the RTSA compilation that entail need for some contingency solutions.

## Literature review

The development and implementation of the TSA methodology prompted almost immediate interest in its adaptation to measurement of tourism's contribution to regional economies. Nevertheless despite the fact that almost 15 years has passed since the publication of the TSA methodological framework (UNWTO, 2001) the uniform approach to RTSA has not been achieved. Its updated version includes only some general hints on the concept of RTSA (UNWTO, 2010). The lack of common stand regards both methodological and practical solutions that should be promoted as a standard (Frechtling, 2009; Jones, 2009; Dwyer et al., 2010). The major obstacles to RTSA development include:

- a) insufficient conceptual system of regional accounts – SNA 2008 introduces more elaborated approach but it still leaves a significant space for country-specific solutions (EUROSTAT, 2013); this concerns especially allocation of central government services and multiregional producers like transportation companies (Frechtling, 2009);
- b) deficit of proper statistical information on both production and tourism demand (Frechtling, 2009; Jones, 2009).

To some extent the discourse on the subject has been dominated by discussion on basic prerequisites that the methodology of assessment of tourism contribution to a particular economy should fulfil so that it could be recognized as RTSA. Such conditions were formulated by Frechtling (2009; 2013) and they embrace the following issues:

- it should use account information instead of estimates based on modelling,
- it should incorporate at least 10 characteristic industries and products,
- it should use TSA macroeconomic aggregates adopted for sub-national level,
- it should contain a set of interlinked tables taken from TSA, namely covering the internal consumption by product, production account of tourism and other industries, total domestic supply and internal tourism consumption, employment in tourism industries and non-monetary indicators (Frechtling, 2009),

- it should be developed by the Central Statistical Office (CSO) or in close co-operation with it (Frechtling, 2013).

Other researchers are less strict about the above recommendations and posit more pragmatic approach. They argue that few countries develop full set of regional accounts, especially in regard to make and use matrix, so they will never comply the proper RTSA and measure regional contribution of tourism (Jones, 2009; Dwyer et al., 2010). The same problem concerns the availability of regional data on tourism consumption. That means that if tourism and regional accounts are not of major political interests some countries will never improve their tools for measurement of economic contribution of tourism (Jones, 2009). As a remedy they propose solutions more loosely drawing on the TSA methodology but employing its basic assumptions:

- the same definitions, scope and treatment of particular issues,
- compliance with national accounts data,
- compliance with the TSA results, but the latter with some reservations (Jones, 2009; Dwyer et al., 2010; Canada, 2013).

Jones (2009) proposed regional tourism economic accounts (RTEA) that are based on production accounts of tourism industries. It is a problematic approach because it entails presentation of tourism consumption by industry instead of product. Its author himself notices this difficulty as practical aspects of relevant data are concerned. Other authors, notably Canada (2013) indicate that RTSA should follow the practice of regional accounts compilation. The choice is between top-down and bottom-up approaches. Bottom-up approach is more often used by countries with federal political system and if tourism is perceived as important it is part of it. Top-down solution is more common in centralized countries and usually is cheaper and easier to execute. The bottom-up approach provides better insight into particular regional economies and more thoroughly reflects actual differences between them but may be costly and inconsistent with national figures. Many countries employ the combination of both approaches (a hybrid one) but even then the starting point for regionalization of national accounts may be at “top” or “bottom” (Jones, 2009; Zawolińska, 2009). According to Canada (2013) the same rules may be applied to regionalization of the TSA.

In the meantime quite many countries have undertaken efforts towards regionalization of TSA. The methods employed vary from modelled approach in Norway where regional tourism output was calculated via allocation of regional indicators to tourism demand (Frechtling, 2009) to the use of original regional supply and use (SUT) matrix in Andalusia (Teigeiro, 2009). In most case the hybrid approaches turned out to be the only feasible ones (eg. Laimer, 2012; Dwyer et al. 2010). The methodological proposal presented in this paper follows the same path: it tries to stick as much as possible to national accounts data with some estimations when necessary.

## The background

Interest in the RTSA development may be shown by different groups of stakeholders. It is important which group they represent because it affects availability of resources, data, and to some extent expectations about the outcomes of the RTSA. The national government is usually interested in some general picture of the spatial distribution of tourism while regional governments would like to get more detailed information on its performance on their territory.

Poland consists of 16 voivodships that are equivalent to the NUTS 2 within the EU. The country is relatively uniform as culture is considered but regions differ strongly in respect to their size, population, economy and tourism.

Despite the fact that official names of the voivodships remind of historical associations the present administrative division is often artificial. That made some regions internally inconsistent. The differences in economy between the regions and in some cases within them embrace income per capita, structure of the economy and also tourism. Regional governments are responsible for economic development although many important decisions and fiscal policies are centralized. One of their major responsibilities is utilization of the EU structural funds so they prepare regional development strategies and regional operational programs. In this context some of the regional governments have started to express interest in development of the RTSA addressing the request to the Ministry of Sport and Tourism or directly searching for executors of such task. The representatives of regional governments have used to voice their needs at different occasions so it may be assumed that they look for answers to the following questions:

- What is the contribution of tourism to the regional economy?
- What is the role of particular industries serving visitors?
- What segments of the market have the biggest contribution?
- What is the impact of tourism on the regional economy?
- What is the special distribution of effects of tourism within the region?
- What is the efficiency of public involvement into tourism development?

To fulfill those requirements the RTSA should allow identification of the input of particular industries into the regional economy, the regional part of their supply chain and the demand of particular market segments. For the regional governments it would be useful if such information could be provided for NUTS 3 or even smaller administrative units. This means that the requirements go beyond the output of the TSA that focuses on direct effects of tourism consumption but they form expectations that should be taken into account during development of the RTSA methodology.

The regional governments are interested in their regions but they do not operate in vacuum. The performance indicators should allow comparisons with the national level and other regions hence they should be based on consistent data reflecting practice of national accounts. Tourism in a particular region is usually linked to other regions through the mobility of visitors and organizational structure of enterprises. That means that outcomes of the RTSAs must conform to the TSA for Poland to avoid overlapping of some regional aggregates. The TSA for Poland has been compiled since the 90s for some years as a full-fledged version based on SUT data or for other as a simplified one. For the latter version demand and supply data are projected from the data used in the previous full-fledged version with some adjustment due to demand surveys. The TSA for Poland follows the TSA RMF guidelines and in the last issue for 2011 the TSA RMF 2008 have been implemented. The process of its compilation have revealed some important issues that has to be taken into account in respect to the RTSA:

- supply and use table (SUT) data are available only 3 years after the reference year that means 4 years lag between the TSA compilation and the reference year,
- some tourism industries, notably tour operators and travel agencies have a major share of secondary products in their total output,
- there are a few sources of information on tourism demand but they sometimes provide contradictory information in areas in which they overlap while some issues are not covered.

In response to those issues some practices have been elaborated for the TSA compilation:

- for the last edition (for 2011) the lag has been shortened to 2 years owing to the independent disaggregation of production account provided by the Department of National Accounts of the Central Statistical Office

(CSO) for industries classified at 2-digit level; the disaggregation has been based on structural business statistics database of EUROSTAT and Polish industrial statistics,

- household budgets survey carried out by the CSO provides basis for the estimation of the residents' demand; the data are supplemented by outcomes of other relevant surveys and data on prices that allow some estimations,
- there are no data on same-day travel and information on short-term travel is used as a proxy,
- data on expenses on business travel are supplied by the Department of National Accounts, they come from the survey among businesses but need additional product disaggregation that is based on survey on travel behavior of Poland's residents,
- the imputation of rent for secondary homes is based on demand side survey so the picture may be incomplete.

The compilation of TSA for Poland was supervised and funded by the Ministry responsible for tourism and executed by a commissioned team of experts. Only the first experimental TSA was developed within the CSO structures (Baran et al., 1999). That arrangement involves some difficulty in data availability and commitment of the CSO to TSA compilation that has to be taken into account in regard to the methodology of RTSA. The outcomes and practice of the TSA set framework for the development of the RTSAs if they are to produce figures consistent both with national tourism statistics and with national accounts.

### **The concept of the RTSA for Poland – supply side**

The concept of the RTSA methodology has been founded on the following assumptions taking into account the background discussed above:

- its outcomes should reflect the actual contribution of tourism to the regional economy and should be based on the output of businesses localized in the region,
- the production account of tourism industries in a particular region should be based on data compatible with those from regional accounts,
- tourism demand in a region should clearly show the share of the following segments: residents of the region, residents of the other regions and foreigners and should be shown as a share of demand in the whole country (that follows the general guidance set by UNWTO experts (Frechtling, 2013; Canada, 2013)).

To recapitulate the above, the proposed methodology is a hybrid one combining top-down approach with bottom-up where it is possible due to data sources or organizational reasons. It is to provide data on tourism consumption in the region, output and value added related to tourism consumption, employment, fixed capital formation and tourism contribution to regional GDP. It means compilation of all tables proposed by Frechtling (2009) and additional table on fixed capital formation. Tables 1 and 2 show the basics of the RTSA contents and issues that have to be taken into account in the process of its compilation. The issues marked as "problematic" may be solved by top-down approach with estimations based on national surveys or by bottom-up approach if special surveys will be possible. For the activities whose operations are not bound to the location i.e. tour operators and transport the tourism ratio of output is not limited to consumption on the region's territory.

**Table 1.** Contents of the production account of RTSA for tourism characteristic activities

Industry	Comments
Accommodation for visitors	Local production units, problematic issue: identification of the share of secondary production in a particular region.
Imputed rents for second homes	If possible bottom-up approach based on survey in local governments.
Food and beverage serving activities	Local production units, problematic issue: identification of the share of secondary production in a particular region.
49.1. Passenger rail transport, interurban	Local production units; attribution to regional tourism production based on localization; problematic issue: identification of the tourism consumption ratio.
49.3. Other passenger land transport	Local production units; attribution to regional tourism production based on localization; problematic issue: identification of the tourism consumption ratio.
50.1. Sea and coastal passenger water transport	Local production units; attribution to regional tourism production based on localization.
50.3. Inland passenger water transport	Local production units; attribution to regional tourism production based on localization.
51.1. Passenger air transport	Local production units; attribution to regional tourism production based on localization; problematic issue: identification of the tourism consumption ratio.
77.11. Renting and leasing of cars and light motor vehicles	Local production units; attribution to regional tourism production based on localization; problematic issue: identification of the tourism consumption ratio.
79. Travel agencies and other reservation service activities	Local production units; attribution to regional tourism production based on localization; problematic issue: identification of the tourism consumption ratio and share of secondary production.
91. Libraries, archives, museums activities and other cultural activities	Local production units; problematic issue: identification of the tourism consumption ratio.
93. Sports, amusement and recreational activities	Local production units; problematic issue: identification of the tourism consumption ratio.

Source: own elaboration.

**Table 2.** Contents of the production account of RTSA for country-specific characteristic and related to tourism activities

52.23. Service activities incidental to air transport	Airport fares paid by non-residents to non-resident airlines; relevant only to regions with international airports.
86. Human health activities	Medical spas services, relevant to regions with such spas.
47. Retail trade	Local production units; problematic issue: identification of the tourism consumption ratio.

Source: own elaboration.

Due to the absence of regional SUT tables the information on intermediate consumption will be limited to the general information on its volume for particular economic activities. For the same reason presentation of the break-down of the activities output by product in Tables 1 and 2 may be imprecise. The calculation of the tourism contribution to region's GDP will be based on top-down apportioning of net intermediate taxes. The same approach will be employed to apportion secondary activities.

### The concept of the RTSA for Poland — demand

It is worth recalling that the starting point in the determination of the scope of tourism consumption in a region are the TSA assumptions adopted and recommended by the UNWTO (2008). The demand side of the TSA means consumption expenditure by participants in tourist traffic (visitors), incurred in connection with taking trips outside

their usual environment. As in the national TSA, regional tourism consumption encompasses final demand and intermediate consumption by various institutional sectors, limited to the economic territory of the region covered. The main methodological assumptions of the RTSA are basically consistent with those for the national TSA, the ‘economic territory’ under analysis being the territory of a given region.

**Table 3.** Tourism consumption: interregional input-output table

Region of origin	Region of tourism destination					Total consumption by region of origin
	region 1	region 2	...	region n	foreign sector	
Region 1	$CIR_{11}$	$CIR_{12}$	...	$CIR_{1n}$	$CFW_1$	$CE_1$
Region 2	$CIR_{21}$	$CIR_{22}$	...	$CIR_{2n}$	$CFW_2$	$CE_2$
...	...	...	...	...	...	...
Region n	$CIR_{n1}$	$CIR_{n2}$	...	$CIR_{nn}$	$CFW_n$	$CE_n$
Foreign sector	$CFP_1$	$CFP_2$	...	$CFP_n$		$CE$
Total consumption in regions of destination	$CR_1$	$CR_2$	...	$CR_n$	$CF$	$C$

Source: own elaboration based on Canada, (2013): 15.

The interregional flows in the RTSA are illustrated by the matrix shown in Table 3. Tourism consumption in a region includes:

- consumption by the inhabitants (residents) of a given region within its territory; in Table 3 it is represented by the diagonal fields ( $CIR_{11}, CIR_{22}, \dots, CIR_{nn}$ ),
- consumption by the inhabitants (residents) of other regions of the country within its territory; in Table 3 it is represented by the fields in the columns,
- tourism consumption by foreign nationals, referred to as the ‘foreign sector’ in the interregional input-output table.

It is worth noting that tourism consumption in a region will encompass household consumption from disposable income of visitors, expenditure related to business trips (intermediate consumption), consumption by the general government and non-profit institutions. As regards the tabular part of the RTSA, figures describing tourism consumption should be presented in four tables referring to tourism expenditure and tourism consumption by type of product and group of purchasers in terms of value. The first Table shows consumption by **non-residents of the region** – tourists and same-day visitors from outside the national territory (‘foreign sector’), the second – that by **non-residents of the region – domestic visitors**, the third – tourism expenditure by **residents of the region** travelling within its territory, the fourth – the total consumption within the territory of the region (by both residents and non-residents of the region). In accordance with the logic adopted in developing the methodology, direct surveys of consumption will only cover expenditure linked to consumption in the region. Therefore, those will include accommodation services, food- and beverage-serving services, recreational and cultural services, commercial services, possibly rental of cars and services identified as characteristic of Poland.

### Available sources of information and feasibility of the project

As sources of information are concerned they basically will come from national surveys and statistical reporting. It is necessary to use several sources of data supplemented by estimates. The sources of information on

**tourism consumption** of Polish residents will be surveys carried out by the Institute of Tourism and follow-on surveys by other research units (until 2013) as well as surveys of household expenditure; after 2014 those will be CSO surveys. Till 2015 there have been no information on same-day travel and in the TSA some estimates have been used. Those will be surveyed by CSO from 2015 and it should enable to identify the scale of the phenomenon in specific voivodships. Since 2015 the statistical information on tourism will conform to the rules established in the EU (EU, 2011).

As regards the estimation of tourism consumption by residents of a given region, for years earlier than 2014 there is no source of data to allow it. Such estimates may be based on: (a) findings from regional surveys (if available)<sup>1</sup>; (b) from 2014 – CSO survey entitled *Uczestnictwo w podróżach krajowych/zagranicznych według kwartałów* (PKZ) (Participation in domestic/outbound trips by quarter (DOT)), data from accommodation registers and prices on some tourist products. The expenditure on all tourist trips in particular regions should sum up to give the figure established for the TSA. The estimates concerning same-day visit may be established independently for reference years before 2015. For earlier years the same assumption will be applied as in the case of TSA – they are estimated as expenditure on short-break trips without accommodation services.

Estimations of tourism consumption by non-residents – foreign nationals will be based on annual border surveys conducted by the Institute of Tourism until 2012 and then continued by other research units and CSO. Consumption by the described groups of visitors will be complemented by the so-called other tourism consumption, i.e. subsidies on tourism-characteristic products provided on a non-market basis and expenditure on business trips by both residents of the region travelling within its territory and residents of other regions of the country visiting the region concerned for this purpose. The value and structure of expenditure related to business trips within the regional territory, established on the basis of surveys carried out by the Institute of Tourism or CSO, will be the basis for separate estimations of expenditure on business trips determined at the national level by the Department of National Accounts (using the ‘top-down’ method). The estimates will be confronted with the information on the size and structure of economy in the destination region with special provision for regions specializing in fairs and congresses. At the moment it is impossible to estimate imputed rents for second homes due to the lack of information on the size of the phenomenon.

As regards **tourism supply**, the application of the TSA solutions to the RTSA encounters a number of difficulties resulting from the structure of the economy and the public statistics system. There is a problem of having data on local business units, i.e. units of an enterprise that operate in voivodships outside the one where it is registered. Such units are obliged to submit reports and their output should be accounted for in the territory of their location, but in practice many enterprises have such centralised accounting systems that it is impossible to fully reflect their economic performance. As a result, most or all of output by such businesses will be located in the voivodships where they are headquartered. It is planned that production accounts of tourism activities will be supplied by the CSO and will be based on disaggregation of regional accounts. If for some reason it will not be possible to use those data the independent disaggregation is possible based on data on persons employed by NUTS 2 from structural business statistics.

<sup>1</sup> However, this source of data must not be treated as the primary source, it may only be used to verify other data. It mostly stems from the inconsistency of regional surveys, methodological differences and the lack of continuity.

The economic activities included in the RTSA will be divided into two groups, depending on the territorial scope of production. The first group encompasses businesses which may offer their services at any location, i.e. carriers and travel agencies. Estimations for this group of undertakings will be based on the 'top-down' approach, i.e. using indicators of production specialisation and tourism consumption determined in the TSA. In addition, indicators allowing to estimate net output by travel agencies will be used. As regards other activities, the scope of production specialisation will be established on the basis of the TSA findings and the tourism consumption indicator will be determined from the comparison of data on output and consumption in the region (the 'bottom-up' approach). To this end, since total output is expressed at basic prices, it will be necessary to add an estimated amount of indirect net taxes. Relevant amounts will be estimated on the basis of the values determined in the TSA. The data from national and regional accounts and structural business statistics available in EUROSTAT database will form the foundation of the estimates. Unfortunately Poland supplies only minimal scope of those data.

The presented project of the RTSA methodology is complex because it draws from many sources of data and has to deal with possible gaps and inconsistencies, then its implementation involves some risks. The guidelines for conducting feasibility study (eg. USDA, 2000) provide a useful framework for their identification. They embrace legal, culture, operational, technical, economic and schedule feasibility. The legal constraints may affect availability and permit to publish data on particular activities if they are represented by only a few units in a particular region. Cultural risks may be identified as carrying out special surveys to fill gaps in data is concerned. The enterprises are very reluctant to provide any information so any regional calibration of tourism specialization ratios may be impossible. The same applies to the co-operation of the public sector bodies – it may be assumed that regional government should be helpful but many public bodies are independent and can follow their own policies in this respect. The remaining risks are interconnected: lack of the proper funding can hinder quality of the RTSA outcomes, namely implementation of any aspects of the bottom-up approach. The schedule risks are also important – there is pressure to reduce time lag from the reference year but availability of data on regional accounts is a critical factor in this case. There are also significant risks that the most interested stakeholders, i.e. regional governments will be disappointed with the RTSA outcomes due to time lag, lack of data on spatial distribution and indirect effects of tourism for the region. The special risks are involved in compilation of the first account, only then all proposed solutions will be checked in practice.

## Discussion

The concept of the methodology of RTSA for Poland presented above is supposed to illustrate the contribution of tourism to the regional economy, regional tourism consumption and the contribution of tourism industries and tourism connected activities to value added, GDP, employment and fixed capital formation. It will be fully consistent with the TSA, whereas the sources of information on supply and demand will be kept independent. As in the case of the TSA, it should help to improve the quality of data describing tourism supply and consumption at the regional level. Basically, the results of regional accounts should add up to the results of the national account, but it is possible that in cooperation with the regional authorities new data on second homes or collective consumption will be obtained, thus the RTSA would contribute to more accurate estimates contained in the TSA.

The presented methodology of the RTSA is a compromise between the need for better information on tourism performance expressed by regional administration, availability of information and system of regional accounts in Poland. For some authors it does not fit the requirements of the RTSA because it is not based on regional SUTs or I-O tables nevertheless such solution may be better than lack of information (Dwyer et al., 2010: 260). The obvious

reason for that is the procedure of regional accounts development in Poland which creates the barrier to any other realistic methodological proposals. The RTSA will produce some basic indicators on tourism performance but it will not allow any regional comparisons of tourism productivity that should be considered as a major drawback. In fact very similar solutions have been employed in Austria (Laimer, 2012).

The proposed information sources represent a trade-off between expectations and real possibilities. The development of the methodology with regard to data sources is made no easier by the fact that both basic statistical systems are in transition – the national accounts are being converted into the ESA 2010 system, whereas from 2014 CSO is adapting tourism statistics to the updated Council Directive (EU, 2011). It has been established that some of the data will need to be based on estimates. The methodology proposes specific solutions in this regard, but only the preparation of a pilot RTSA, which will be implemented for Mazowieckie Voivodship in 2015, will allow to determine to what extent the assumptions prove correct and possibly show the need to seek other solutions. Despite the interest in measurement of tourism's economic contribution at NUTS 3 level it will be impossible in the nearest future due to lack of the data.

## Conclusions

The review of theoretical concepts and actual availability of resources shows that it is possible to measure the tourism contribution to regional economies with some accuracy. In fact in other countries similar solutions and compromises have been implemented. Improvements will be possible only if there is strong support for research on tourism. There is also strong risk that the idea of RTSA in Poland will be dropped after some patchy applications. In any case the experience with the TSA itself indicate that without further development of the methodology and issues covered by the RTSA the interest in it may wither.

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