

## **Annex 16. System of Environmental-Economic Accounts (SEEA) data for tourism**

Please note: The present ANNEX is a full reproduction of EC, OECD, UN & WB. (2014). System of Environmental-Economic Accounting 2012: Applications and Extensions paragraph 4.40 to 4.59.

1. There are a number of perspectives on economic activity that may not be easily reflected in the structure of information on economic activity following standard international industry classifications. This may occur for two reasons. First, a particular activity may involve enterprises from a range of different parts of the economy each having different production functions and principle outputs. Consequently while the enterprises are classified to different industries they may have relationships that could be analyzed jointly. The most commonly considered activity in this regard is tourism activity. Another example would be activities around health (e.g. hospitals, pharmaceuticals, medical equipment, education, policy development, etc).
2. Second, there may be a particular activity that is undertaken by many enterprises in different industries but which may be difficult to identify in standard industry statistics since it is often not the principal activity of the enterprise. The most relevant example of this for environmental economic accounting is transport activity which is a significant user of natural resources and a significant contributor to air emissions. The own-production of energy is another activity that may fit this type of analysis. It is noted that for analysis of these specific activity an important aspect may be the own-account production of households in addition to production by enterprises.
3. This Annex presents an example of an extension of the SEEA Central Framework in relation to tourism activity: it therefore refers to the national level.

In general, the same considerations as described in relation to tourism will apply to other activities. That is, it will generally be necessary to start with a standard monetary PSUT or IOT, then determine the key products and industries of relevance to measurement of the activity (this may require disaggregation of some of the standard rows and columns), and finally extend the modified table with relevant physical flow information (e.g. on flows of emissions or solid waste).

### *Presentation of environmental-economic accounts data for tourism*

#### Introduction

4. The importance of good information on the tourism sector has been recognised within the presentation of principles and objectives in the Lanzarote Charter developed at the 1995 World Conference on Sustainable Tourism. Significantly, it was observed in that charter that tourism can contribute positively to socio-economic and cultural development, while at the same time it can cause degradation of the natural environment and loss of local identity. Integrated environmental, economic and social information is essential, then, for defining policies regarding tourism.
5. In the context of the SEEA it is relevant to consider links between the accounting approach that has been developed for analysis of tourism, the Tourism Satellite Account (TSA), and the SEEA\_CF since both are based on the accounting principles of the SNA. A combining of TSA and SEEA would enable consideration, within an integrated dataset of both the contribution of tourism to the economy and the environmental uses and pressures of tourism activities.

6. The extension of the SEEA suggested here is along the lines of an approach explained in the International Recommendations for Tourism Statistics 2008 (IRTS2008) whereby tourism is incorporated as a specific set of industries and of consumers within environmental combined physical and monetary flow accounts of the SEEA Central Framework (see SEEA Central Framework Chapter 6). The document *SEEA2012 Application and Extensions* provides a summary of the approach and uses of information from Italy where this approach has been trialled to give an insight to the potential in this area.
7. The coverage of the information concerning tourism and the environment in this case is not limited to consideration of what may be referred to as “eco-tourism”, i.e. tourism activities designed to enhance the connection between the tourist and the environment. Rather the coverage here is all type of tourism activities and its use of natural inputs and generation of residuals. In principle, the approaches described here may be applied more narrowly as data permit.
8. It is noted that TSA fall within the general family of satellite accounts described in the SNA (2008 SNA, Chapter 29) of functionally oriented accounts. More specifically, tourism is a concept that must be defined from the perspective of the consumer rather than the producer and hence the following description should be applicable to the combination of the SEEA with other functionally oriented satellite accounts defined from the demand side, such as health.

#### *Key aspects of integrating tourism and environmental information*

9. In general terms, the focus for measurement should be on regular monitoring of tourism activity and allowing analysis of the pressures emerging from tourism activities. Within this scope aspects to be considered particularly important include: current measures of tourism activity (e.g. value added, output, consumption), number of enterprises, employment supported, visitor facilities and services, environmental conditions (air, water), relative contribution of tourism to the economy. All these elements are of interest for making assessments concerning the tourism sector inspired by a holistic approach.
10. Satellite accounting, within official statistics, is a specific tool that in principle best allows the integration of information on the environmental, the economic and the social systems, by focusing on the interrelationships between these three distinct spheres. One specific advantage of accounting approaches is linking data on tourism and on the environment, to the economic aggregates of the core system of national accounts (e.g. GDP), by making use of common concepts, definitions and classifications.
11. From a methodological point of view, compiling a TSA requires a precise definition of the boundaries of the tourism sector. This is done through a focus on the qualitative and quantitative elements observed on the demand side, i.e. to the acquisition of goods and services (products) by visitors. Tourism consumption is then a key concept for a correct identification of tourism-related activities and consumption products. From the supply perspective, the aim is to describe the productive activities that provide the tourism products that visitors acquire.
12. The link to the SEEA can then be made by focusing on (i) the residuals generated as a result of tourism consumption (either by the visitors themselves or by the enterprises supplying goods and services to visitors; and (ii) the natural inputs used in the production of tourism products. Important connections may also be possible by linking measures of tourism activity to measures of ecosystem condition and extent. For example, activity to

improve the attractiveness of an area to tourists may lead to improvements in ecosystem condition. Alternatively, increasing tourism activity may increase environmental pressures and reduce ecosystem condition.

13. Measures of ecosystem condition and extent are not well developed. Initial efforts in this area are summarised in *SEEA Experimental Ecosystem Accounting* document which is the basic reference for any exercise linking environmental sustainability and tourism at subnational levels (see Chapter 8).
14. In line with the IRTS 2008, the following tourism products are distinguished:
  - tourism characteristic consumption products: those that satisfy one or both of the following criteria:
    - tourism expenditure on the product should represent a significant share of total tourism expenditure (share-of-expenditure/demand condition);
    - tourism expenditure on the product should represent a significant share of the supply of the product in the economy (share-of-supply condition). This criterion implies that the supply of a tourism characteristic product would cease to exist in meaningful quantity in the absence of visitors.”
  - tourism connected products: those of lower significance to tourism analysis.
15. Once the relevant set of tourism products is identified, connections to relevant producing industries can be made using standard supply-use and input-output relationships. These relationships form the core of the TSA model. Tourism expenditures are usually estimated on the basis of surveys of visitors and these data form the basis to distinguish between visitor and non-visitor expenditure.
16. Using the defined set of economic activities and products of relevance, the connection can be made to relevant environmental flows noting that some disaggregation of industry level data normally recorded in the SEEA accounts is likely to be required. Thus, the core of the approach consists of establishing a more complex type of input/output matrix in which not only the ‘usual’ inputs are considered, but also environment inputs established in quantity, and output also includes waste, greenhouse gas emissions and other environmentally significant by-products.
17. Table 4.3 [as part of this document it is Table 2] shows the type of information that may be organized using the type of matrix just described based on research undertaken in Italy. The main value added of the proposed framework stems from the fact that it organizes statistical information on economic and environmental aspects in a way that best enables a detailed assessment of the environmental pressures of the economic development of tourism. By making it possible to identify trade-offs between economic development and environmental pressures as far as tourism is concerned, the statistical information organized according to the framework is best suited for providing a valuable support to decision-making for sustainable tourism.

**Table 3 Stylized tourism-environment accounts – specifying tourism industries and tourism characteristic consumption products. Source: SEEA Table 4.3. EC, OECD, UN & WB. (2014).**

		Tourism Satellite Account (TSA) – Monetary units					Environmental accounts (SEEA) Physical units								
		Economic aggregates				Other	Environmental pressures								
		Production	Intermediate Consumption	Valued Added	Tourism consumption	Employment	Residual flows			Natural inputs					
							Air emissions	Water emissions	Solid waste	Energy resources	Minerals	Biological resources	Water		
<b>Supply (tourism industries)</b>	Accommodation for visitors														
	Food and beverage serving activities														
	Railway passenger transport														
	Road passenger transport														
	Water passenger transport														
	Air passenger transport														
	Transport equipment rental														
	Travel agencies and other reservation services activities														
	Cultural activities														
	Sports and recreational activities														
	Retail trade of country-specific tourism characteristic goods														
	Country-specific tourism characteristic activities														
	<b>Use (tourism characteristic consumption products)</b>	Accommodation services for visitors													
		Food and beverage serving services													
Railway passenger transport services															
Road passenger transport services															
Water passenger transport services															
Air passenger transport services															
Transport equipment rental services															
Travel agencies and other reservation services															
Cultural services															
Sports and recreational services															
Country-specific tourism characteristic goods															
Country-specific tourism characteristic services															

■ Not applicable

18. Once time series are made available, these tourism-environment accounts allow to assess, for example, whether or not decoupling is occurring and, in this perspective, they can be used as a key tool for assessing the sustainability of actions taken or policies proposed for adoption in the tourism sector.
19. Using the sequence of economic accounts outlined in SEEA Central Framework Chapter 6, it is also possible to consider the integration of information on relevant taxes, subsidies and similar transfer and also the connection to information on environmental protection expenditure.
20. Table 4.4 [within this document this table is Table 3] shows a simple way of depicting tourism related economic activity and environmental flows in contrast to other economic activities. As with the SEEA more generally, it is clear that the organization of information following integrated use of classifications and accounting principles can help to provide readily accessible and relevant information.

**Table 4 Flows from tourism-environment accounts. Source: SEEA Table 4.3. EC, OECD, UN & WB. (2014).**

	Tourism industries (%)	Other industries (%)		Tourism industries (%)	Other industries (%)
Production	5	95	Hg	0	100
Intermediate consumption	5	95	N2O	0.2	99.8
Value added	7	93	NH3	0	100
Employment	9.5	90.5	Ni	5	95
As	0	100	NMVOG	1.5	98.5
Cd	0.3	99.7	Nox	16	84
CH4	0	100	Pb	2	98
CO	2.5	97.5	PM10	8	92
CO2	4.5	95.5	PM2.5	10	90
Cr	0.5	99.5	Se	3.5	96.5
CU	6	94	Sox	15	85
			Zn	0	100