



National Accounting Statistics vs. Indicators: Two Sides of the Same Coin?

A Comprehensive Concept for
Measuring the Sustainability of Tourism in Germany: The TSSA

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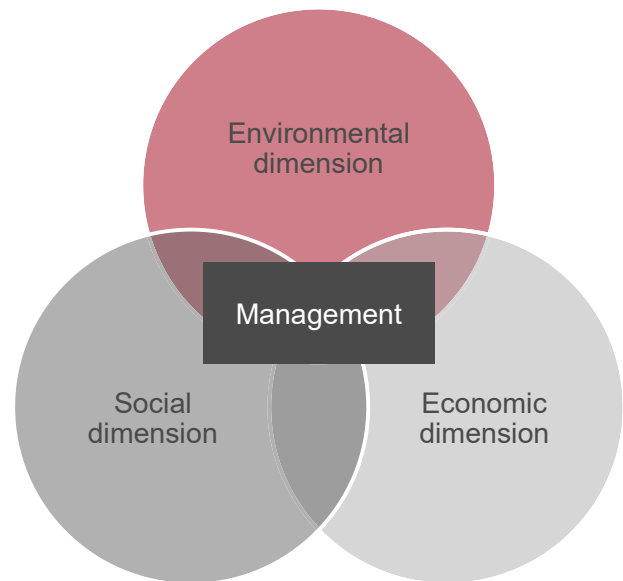
Agenda

1. From the definition to the measurement of sustainability
2. Accounts vs. Indicators
3. National accounts – an overarching framework for the integration of data
4. Tourism as a cross-sectional industry:
The use of the Tourism Satellite Account (TSA)
5. A comprehensive framework for measuring sustainability:
The concept for a “**Tourism Sustainability Satellite Account**” (TSSA)
 - a. The accounting framework
 - b. Supplementary indicators

From the definition to the measurement of sustainability

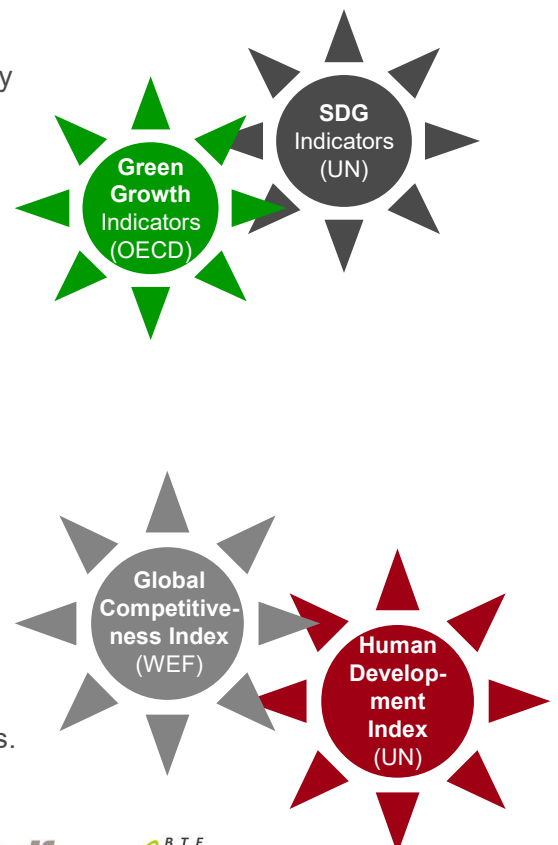
Challenges

- Binary definition of sustainable and unsustainable tourism is not viable due to the absence of undisputable absolute thresholds.
- **Sustainability is a multidimensional concept: environment, economy, society**
 - There is a need for collecting a wide range of data of different types and from different sources.
 - A composite indicator is not appropriate due to the different characters of dimensions and the loss of information through aggregation.
- **Sustainable development means improving the state of the world** with regard to the individual dimensions. This can and needs to be observed over time.



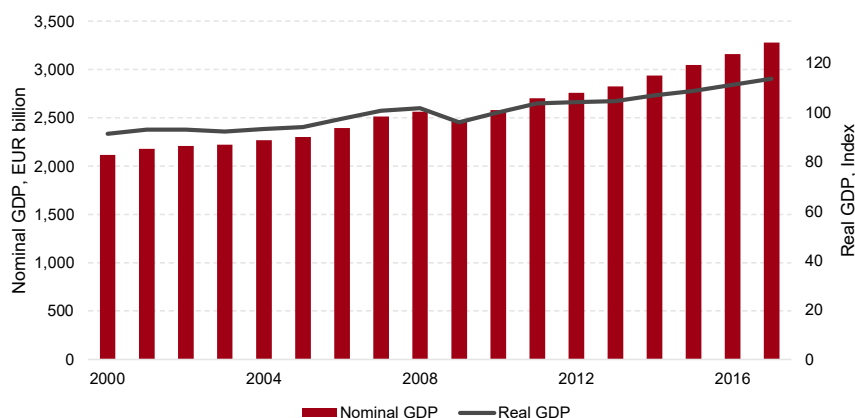
2. Accounts and Indicators – Conceptual Background

- **Indicators** give a simplified representation of a complex reality by focusing on certain, observable/quantifiable aspects of a phenomenon.
 - Typically, their significance goes beyond the direct implications, by allowing conclusions on the state of a system.
- **Composite indicators** combine a range of indicators that reflect different aspects of a problem into one single index number.
 - Often, they are constructed to compare and rank country performance in areas such as industrial competitiveness, sustainable development, globalisation and innovation.
(cf. OECD Handbook on Constructing Composite Indicators)
- **The major challenges** include:
 - a theoretical framework, coverage, redundancy,
 - normalisation, weighting and aggregation of different dimensions and aspects,
 - trackability, and the danger of drawing simplistic conclusions.



2. Accounts and Indicators – Conceptual Background

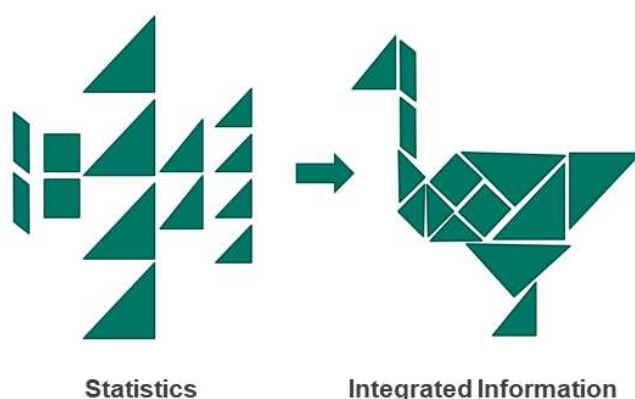
- **National Accounts**... (UNSD, 2009: System of National Accounts 2008)
 - compile measures of economic activity,
 - present in a **condensed and organised way** a great mass of detailed information,
 - provide a **comprehensive and detailed** record of the **interaction between the different economic agents**,
 - apply **various dimensions** such as supply and use;
 - outline **key aggregate statistics such as GDP** or employment, which are commonly used as indicators for economic activity and policy making.



Figures: Destatis, VGR, Bruttoinlandsprodukt ab 1970, 2018.



2. Accounts and Indicators – Conceptual Background



Representation based on UNSD: SEEA Briefing Note *Measurement Framework in Support of Sustainable Development and Green Economy Policy*

- Following established **accounting principles**, accounts are:
 - **Comprehensive** (covering all designated activities and the consequences for all agents),
 - **Consistent** (using identical values to establish the consequences of actions on all parties concerned),
 - **Integrated** (reflecting all the consequences of a single action in the resulting accounts).



National Accounts: A Comprehensive Framework

- **Environmental-Economic Accounts...**

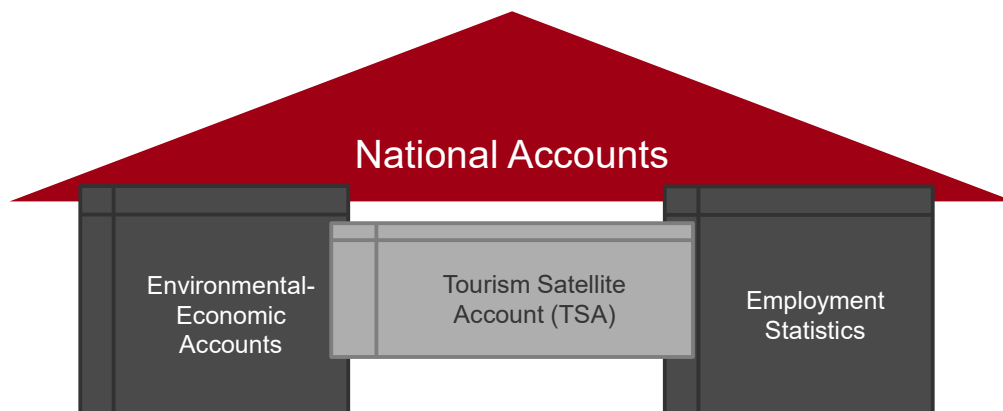
- are satellites to the national accounts, compiled to meet specific information requirements,
- show the interaction between the economy and the environment,
- allow a mapping of undesirable effects such as pollution and resource depletion to specific economic activities, producers or products,
- enable consistent and systematic analyses and the classification of results into the overall context of familiar economic parameters.

- **Employment Statistics...**

- follow the same classifications of industries as the national accounts (based on internationally accepted systems; ISIC/NACE),
- not only contain data regarding the quantity of labour, but also regarding the quality of labour.



National Accounts: a comprehensive framework



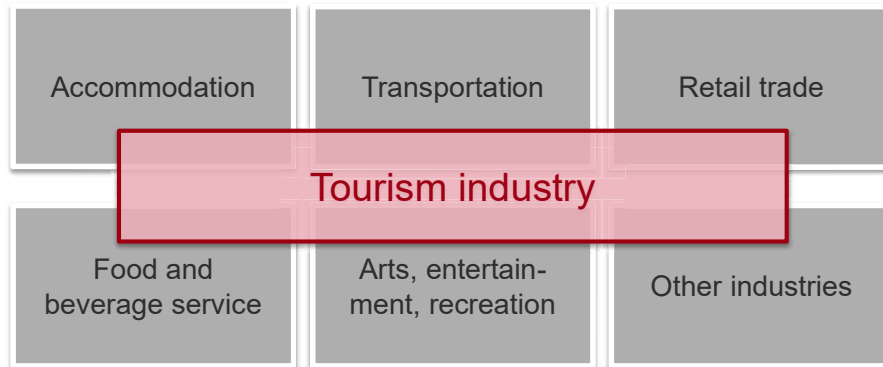
- **The Tourism Satellite Account (TSA)...**

- is an internationally accepted standard for the economic measurement of tourism,
- serves as a tool for relating aspects of environmental and social sustainability to tourism, by referring to economic data.



Tourism Satellite Account, TSA

- Tourism is not an industry shown in official statistics, but a cross-sectional industry, defined by tourists' demand for different types of products.



- Tourism-related economic, environmental and employment figures need to be calculated using dedicated tools.



The concept for a “Tourism Sustainability Satellite Account“ (TSSA)

Tourism Satellite Account		Environmental-Economic Accounts
<ul style="list-style-type: none"> Volume and composition of tourism demand in Germany Output, gross value added, and persons employed in tourism-related industries Tourism shares in <ul style="list-style-type: none"> Outputs of tourism-characteristic products, Tourism-related industries, and The overall economy 		<ul style="list-style-type: none"> economy-wide material and energy flows associated with economic production; including <ul style="list-style-type: none"> Energy, emissions, and water flow accounts by industries Material and energy flow accounts by categories of final use
		Employment Statistics
		<ul style="list-style-type: none"> “Quality of Labour” statistics, e.g. <ul style="list-style-type: none"> wage distribution, qualification working hours, fixed-term contracts evaluations by industries possible



The TSSA in tabular representation – I) overview

	Tourism total*	Accommo- dation	Food and beverage service activities	Land transport and transport via pipelines	Water transport	Air transport	Rental and leasing activities	Travel agency, tour operator & other reserva- tion service activities	Creative and cultural, gamb- ling, sports, amusement & recreation act.	Other	Comparison: German economy as a whole
		55	56	49	50	51	77	79	90-93		
Tourism share (TSA)**											
Share in total tourism GVA (TSA)***	100										
Management											
Certification											
Sustainability strategies											
Economic dimension											
Employment											
Gross value added											
Labour productivity											
Environmental dimension											
Energy consumption											
Energy intensity											
Greenhouse gas emissions											
GHG intensity											
Water use											
Water intensity											
Waste generation											
Nature conservation and biodiversity											
Land consumption											
Noise pollution											
Social dimension											
Decent work (DGB)											
Gender Pay Gap											
Low wage rate											
Overlong working hours											
involuntary time limit											
Over- and underqualification											
Participation denied due to poverty											

The TSSA in tabular representation – II) rows

	unit	
Management		
Certification	% (destinations)	Under development: own data collection, cooperating with certifications organisations and DTV (German Tourism association)
Sustainability strategies		
Economic dimension		
Employment	persons	DIW Econ: Tourism Satellite Account
Gross value added	EUR	
Labour productivity	EUR/person	
Environmental dimension		
Energy consumption	J	Destatis: Environmental-Economic Accounts and DIW Econ: TSA
Energy intensity	J/EUR	
Greenhouse gas emissions	t CO2 equ.	
GHG intensity	t CO2 equ./EUR	
Water use	m³	
Water intensity	m³/EUR	
Waste generation		
Nature conservation and biodiversity		
Land consumption		
Noise pollution		
Social dimension		
Decent work (DGB)	Index	DGB (German Trade Union Confederation): „Decent Work“ Index and DIW Econ: TSA
Gender Pay Gap	% (earnings)	
Low wage rate	% (employees)	Destatis: Quality of employment (indicator set) and DIW Econ: TSA
Overlong working hours	% (persons employed)	
involuntary time limit	% (limited contracts)	
Over- and underqualification	% (persons employed)	Eurostat: European Union Statistics on Income and Living Conditions (EU-SILC)
Participation denied due to poverty	% (population)	

The TSSA in tabular representation – III) columns

	Tourism total*	Accommodation	Food and beverage service activities	Land transport and transport via pipelines
		55	56	49
Tourism share (TSA)**				
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Water transport	Air transport	Rental and leasing activities	Travel agency, tour operator & other reservation service activities	Creative and cultural, gambling, sports, amusement & recreation act.	Other	Comparison: German economy as a whole
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The TSSA in tabular representation – IV) overview

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Participation denied due to poverty											

The concept for a “Tourism Sustainability Satellite Account“ (TSSA)

- **Comprehensive and integrated accounts**, relating to well-known and accepted concepts and figures, **are superior to indicator samples with regard to:**
 - a clear and consistent mapping of activities, players, flows and/or conditions,
 - the classification and interpretation of results in a macroeconomic or macrosocial context,
 - reference points for social, environmental and economic policy design.
- Still, due to the complexity of sustainability in tourism, a single accounting framework is not able to capture all important aspects (at present).
- **Using a number of supplementary indicators can enhance the informative value of the TSSA system.**



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